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THYROID ADENOMAS AND THEIR CLINICAL COMPLICATIONS, WITH ESPECIAL REFERENCE TO THE DISCRETE ADENOMA

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THE solitary, discrete or "fetal" adenoma of the thyroid gland is not really a goiter in the common sense of the term, since it is not the result of a hyperplastic or degenerative process in the thyroid gland. It should be looked upon as a tumor growing in an otherwise normal gland. The tendency is to include this type in the general term "goiter" and to decide on its management on the basis of any effect it may produce on thyroid function. It is a common experience to see an individual who has had repeated metabolism tests which were used as a basis of advice concerning treatment of the goiter. Only in rare instances does the metabolic rate properly enter into the decision regarding treatment of a discrete adenoma of the thyroid. Discrete adenomas all deserve careful consideration because of the complications which so often accompany them.

From the clinician's viewpoint, the commonest enlargement of the thyroid gland is the simple, diffuse, symmetrical colloid goiter that appears most often at puberty, pregnancy, or the menopause. This goiter is probably related to thyroid deficiency and is a so-called "work hypertrophy" of the gland. As this colloid goiter persists, degenerative changes may occur therein, with alterations in the blood supply and with formation of multiple nodules. These nodules are irregularly placed in the thyroid and are the result of degenerative processes, following the thyroid cycle of hyperplasia, involution and rest. They are not in the nature of new growths, either clinically or histologically, and probably are in no way related to the origin of cancer in the thyroid gland. Not infrequently, however, these multiple nodular or adenomatous goiters cause symptoms from their effect on the metabolism or from pressure on nearby structures.

It has been shown that the thyroid adenoma inclines in its structure toward the normal thyroid gland. Due to its repetition of the different developmental stages of the normal gland, plus the occurrence of intracapsular regressive changes, the thyroid adenoma is marked by both macroscopic and microscopic multiformity of structure. This has led to many classifications of thyroid adenomas, dating from Virchow's early differentiation (1880) on the basis of gross appearance into the soft glandular goiter, the fibrous goiter and the vascular goiter.

Adenomas in general—and it is the solitary, discrete adenoma that concerns us chiefly here—may be classified as either (1) parenchymatous or (2) colloid in form. The parenchymatous adenoma is characterized by quantitative predominance of epithelial elements over the colloid secretion and stroma. It is this group that includes the immature celled "fetal adenoma" so designated by Woelfler, quoted by Wegelin,[12] who ascribed the term adenoma to only those tumors which, according to his opinion, developed from rests of embryonal, glandular epithelium. These parenchymatous "fetal" adenomas are composed of immature, incompletely differentiated cells, often suggesting embryonic or fetal origin, and they are peculiarly liable to changes commonly associated with tumors having fetal tissue. Their histologic structure may show solid strands and cords of epithelial cells with or without some follicle formation. They do not yet have the characteristics of completely matured thyroid tissue, i.e., uniform, well-developed follicular structure with generous colloid and abundant stroma. They occur in the form of discrete, solitary, encapsulated nodes and may reach a diameter of several centimeters. They are subject to rapid growth with increased intracapsular tension, leading to alterations in blood supply, intranodal hemorrhages from the poorly supported, easily traumatized vessel walls, and to malignant degeneration.

The colloid form of adenoma represents a more mature stage of cellular development, with large follicle formation, abundant colloid and stroma. That even this type may undergo malignant change is seen by the occasional proliferation of lining epithelium into papillary projections within the follicles, forming thereby the papillary cystadenoma, well known for its malignant potentialities.

Much controversy has existed over the probable origin of thyroid adenomas. The evidence

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rather favors development from the epithelium of preexisting follicles in the normal thyroid gland, rather than from rests of embryonal epithelium. Woelfler's clinical impression that adenomas arose from embryonal rests has persisted, though it has not received the support of those who have since made intensive pathological studies of this problem (Virchow, Hitzig and Michaud, and Wegelin[12]). There have been no confirmed findings of embryonal rests or nodes in the fetus or the newborn.

As with most nodular tumors, central necrosis with replacement fibrosis commonly occurs, due both to inadequacy of blood and lymph supply and to gradual aging of the central cells. Advancing growth of the tumor tissue is almost exclusively peripheral. Such regressive changes as fibrosis, hyalinization, mucoid, amyloid and fatty degeneration, calcification and actual bone formation are known to occur. These changes occurring in the blood vessel walls themselves form the anatomic basis for disturbances in circulation, that is, ischemia, edema, hemorrhage, thrombosis, infarction, embolism, and cyst formation, which are of great importance for the further fate of the adenoma.

And lastly it may be pointed out that different stages of development and differentiation, that is, both parenchymatous and colloid characteristics, may occur in different parts of a single adenoma.

While the size of an adenoma may vary from one millimeter to the size of a man's head, these huge masses are not pure adenomas. They almost without exception show extensive cyst formation which owes its origin to secondary changes, namely previous hemorrhage within the adenoma. Pure adenomas reach at most a diameter of five to six centimeters. The most frequent range is between one-half and four cm. in diameter.

Although adenomas may occur at any age, they become notably frequent from puberty on, and show thereafter a higher incidence with increasing age. Rare cases of single adenoma in infants have been reported (Hueck,[4] Wegelin[12]).

We are convinced that the viewpoint that a discrete adenoma may be left alone until it causes symptoms is incorrect, since the thyroid adenoma is so frequently the origin of complications other than hyperthyroidism. In order that we may emphasize the necessity of undertaking active treatment of discrete thyroid adenomas when found, we wish to review the various complications that may occur in these cases, and to illustrate them by brief case reports from our practice.

The diagnosis of a discrete adenoma of the thyroid is usually easy, but at times it is almost impossible. It is usually noted as a one-sided, asymmetrical, encapsulated tumor of either lobe or isthmus of the thyroid. It moves with swallowing, and because it is entirely surrounded by a capsule it can be readily felt to "jump" through the examiner's fingers as the patient swallows. With care one can feel that he is palpating a rounded, spherical tumor and not a thickened, lower thyroid pole. The commonest error in the authors' experience, however, has been in mistaking a somewhat enlarged and convoluted inferior border of the thyroid for an encapsulated discrete adenoma. Experience in palpating the thyroid will enable one correctly to distinguish these possibilities.

Occasionally a discrete thyroid adenoma will be completely substernal, and no evidence of its presence can be seen or felt in the neck. This is rather unusual, but may be suspected when a patient states that a goiter formerly present has disappeared, or when evidences of tracheal pressure are found. This type of adenoma will be found by x-ray studies of the trachea and mediastinum. Most discrete adenomas of the thyroid will be visible, however, and at least their superior borders will be felt when the patient swallows. Inability to palpate the entire circumference of such a tumor or to palpate its lower borders warrants an x-ray at once to determine how deeply it descends into the chest.

As previously emphasized, the discrete adenomas are to be distinguished from thyroid enlargements due to degenerative changes with the development of many irregularly placed nodules. Perhaps 15 per cent of these multiple colloid adenomatous goiters will have coincidental "fetal" adenomas in them, many of which can be found only on histologic study and are not included in the present discussion. It is frequently impossible, however, to know from clinical examination whether an adenoma is fetal or degenerative in type.

In our experience with many thousand goiter cases, it is our impression that the commonest complications of thyroid adenomas are hemorrhage into the adenoma, malignant degeneration, and pressure on nearby structures. Additional complications of adenomas that we have observed are hyperthyroidism, acute or chronic inflammation, and trauma.

In 62 cases of discrete adenoma of the thyroid seen by us in the past 15 months, acute hemorrhage has complicated 5 cases.

In the larger adenomas, the increased tension of the capsule and accompanying compression of the thin-walled veins cause a slowing of circulation so that congestive hyperemia is a very frequent manifestation. On the other hand, narrowing of the afferent vessels as a result of hyaline degeneration or calcification can reverse the process, so that the parenchyma becomes inadequately nourished and degenerates in consequence of increasing ischemia.

Although hemorrhage is a relatively frequent complication in adenomas, none of our patients

experienced a hemorrhage so massive that it quickly enlarged the thyroid gland and compressed the trachea with immediate danger to life. This has been reported, however, with death resulting in a very short time. In one of our cases (Dr. A. F.), serious dysphagia was present shortly after the hemorrhage and necessitated an emergency operation. Hemorrhage may arise either spontaneously or following blunt trauma, such as from a blow, shove, or fall upon a sharp-edged object. Relatively slight trauma to a nodular goiter has been known to produce a violent hematoma. The enlarged thyroid, especially one under tension, is much more easily traumatized than the normal thyroid gland. Rupture of cystic goiters has also been frequently reported, and since these cases are mostly traumatic, the hemorrhage results not from bursting of the nodular capsule but from the adjacent torn thyroid tissue.

The following case report of 1 of our 5 cases with hemorrhage gives a typical story of the patient who has sudden bleeding into a thyroid adenoma.

Dr. A. F., aged 56 years, was seen August 27, 1935. Ten days ago he contracted dermatitis venenata of the face which spread down on his neck. This cleared well. Four days ago there was an onset of mild pharyngitis. Three days ago, moderate swelling and tenderness developed in the right lower neck. The day before admission the pressure became more pronounced and serious difficulty in swallowing appeared. The neck swelling increased and fever of 101° developed.

Examination showed the dermatitis venenata to have largely disappeared. The right lobe of the thyroid was replaced by a very large, firm, excruciatingly tender adenoma which was partly substernal and pushed the larynx and trachea markedly to the left. A diagnosis of adenoma of the thyroid with acute infection or acute hemorrhage was made, and immediate operation carried out. An adenoma the size of a large orange (10 cm. in diameter), partly substernal, replaced the right lobe of the thyroid gland. All the tissues of the neck were markedly edematous and hyperemic. The deep muscle (thyrohyoid) was firmly adherent to the adenoma. The latter was removed intact, and on gross section it was evident that acute hemorrhage had occurred in the parenchymatous adenoma. The wound was closed with drainage. Recovery was uneventful, with gradual disappearance of the edema of the neck. Microscopic examination showed multiple colloid adenomatous goiter with necrosis and hemorrhage.

Most intranodal hemorrhages are not of an immediately serious nature. They are either local or very limited and develop slowly, so that the more marked symptoms of compression are lacking or relatively mild. They usually occur in the central part of the node, where a central hemorrhagic infarct may be seen in contrast to the peripheral zone. If the hemorrhage is small, resorption frequently supervenes with new growth of vascularized connective tissue, plus moderate lymphocytic infiltration, with later deposition of cholesterin crystals, resulting in a brown pigmented scar.

Hemorrhage into a thyroid adenoma must generally be differentiated only from an acute inflammation of a goiter which it most closely resembles. Usually no question of diagnosis between hemorrhage or malignant degeneration arises, since even the most serious malignancy requires more than the few hours or days needed to produce the sudden swelling of a hemorrhage into an adenoma. To decide whether an adenoma is acutely inflamed or acutely swollen from hemorrhage is often difficult and at times impossible. In 2 of our cases a fever and low leucocytosis accompanied the acute swelling. Local tenderness was marked, and we were uncertain until operation which of the two possibilities was present. In either case, however, immediate operation is indicated.

It has long been recognized that the goitrous thyroid is much more often beset with inflammatory processes than the normal thyroid gland.

FIGURE 1. Typical thyroid adenoma in girl of 20 years. Note the asymmetrical discrete swelling of the left thyroid lobe due to the single encapsulated tumor. Surgical removal indicated to prevent later complications, such as hemorrhage, pressure, cancer or toxicity.

Lebert (1862), quoted by Wegelin,[12] differentiated thyroiditis and strumitis, that is, inflammation of the normal gland versus that of the goitrous gland. Kocher in 1878 first recognized the metastatic and infectious nature of strumitis. He clearly showed that the disposition of the adenoma for inflammation resulted from its regressive changes and from the lessened vitality of its tissues. He believed that (1) cysts and hyperplastic goiters with circulatory disturbances (thrombosis, hemorrhage) and (2) degenerative changes (fatty degeneration, deposition of colloid, necrosis) were especially suited for the localization of blood-borne microorganisms.

In general, strumitis will develop in large rather than in smaller nodes, and since the larger are more frequent in areas of endemic goiter, strumitis will be found more often in these localities.

Strumitis may occur in simple acute form, with lymphocytic infiltration and swelling, which gradually disappear, in purulent form and in gangrenous form. Purulent liquefaction, wherein the interior of the adenoma forms an abscess cavity, may supervene. Solitary abscesses are more frequent than multiple abscesses in several nodes. Etiologically, Kocher's dictum that strumitis rests on metastatic bacterial infection applies today for most strumitides. Direct infection from without, by puncture and trauma, is extremely rare. Direct infection from the larynx and trachea is still open to question, but is generally accepted as a common cause of strumitis.

Acute strumitis has been observed in the course of most infectious diseases. The symptoms are referable locally to the adenoma rather than to the entire gland. Painful enlargement of the adenoma, tenderness, dysphagia and fever suggest the diagnosis. Redness and swelling of the overlying cutaneous tissues are rare until late in the disease. Timely incision and drainage or excision of the infected adenoma will abort the danger of general spread, peristrumitis with mediastinal extension, or rupture of the abscess into the esophagus, trachea or mediastinum.

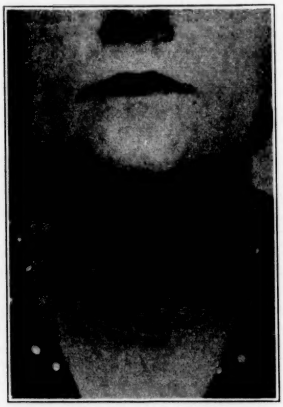

FIGURE 2. Close-up of scar 6 months after thyroid operation. Good scars and no mortality should be expected after the removal of a simple adenoma of the thyroid.

The strumitis can be wholly chronic in form, manifested by low-grade suppuration, infiltration with lymphocytes and plasma cells, and overgrowth of connective tissue. More frequently chronic strumitis follows the acute stage, leading to eventual healing. The iron-hard Riedel's struma develops on previously normal or diffusely hyperplastic thyroid tissue and in this way is related more closely to thyroiditis than to strumitis. It occasionally appears in adenomas.

Although several cases in this series of discrete adenomas showed varying degrees of strumitis, acute and chronic, it was of histologic rather than clinical importance. None showed abscess formation or massive gangrene, and we believe these complications are rare in this area.

Outspoken hyperthyroidism in patients with solitary discrete adenomas has been reported by many observers, and this has been established both by clinical tests and microscopic examination. That the enucleation of the adenoma alone has generally allayed the manifestations of hyperthyroidism has been our experience. These cases have been designated "toxic adenomas" by Plummer, Goetsch, Wilson and Boothby (quoted by Wegelin[12]). They believe the secretory activity of the adenoma may express itself chiefly in elevation of the metabolism, in tachycardia and in nervous disturbances, while the typical picture of exophthalmic goiter which is associated with hyperplasia of all the thyroid tissue does not develop. With this we are in agreement.

The histology usually shows an adenoma of large follicle type, with marked epithelial growth, polymorphism of the follicles, papillary structure, and thin liquid colloid—in short, many manifestations found in genuine diffuse exophthalmic goiter.

Biologic tests, that is, the effect of thyroid substance on the development and growth of tadpoles, have shown that (1) extracts from adenomas, (2) extracts from normal thyroid tissue, and (3) industrial thyroid extracts have the same physiologic action. The adenoma extracts, however, are usually less powerful in their effect (Wegelin[12]).

Three patients in our series showed clinical evidence of hyperthyroidism, which was relieved following excision of the adenoma. One patient (No. 554, Mrs. F. B. D.) aged 48 years, with a 7 cm. adenoma of the left lobe for 15 years, experienced definite growth of the adenoma during the past year, together with nervousness, palpitation, tremor, and loss of 26 pounds despite increased appetite. Basal metabolism rate at home was +30 and at the hospital, after the use of Lugol's solution, it was —6. At operation the thyroid gland appeared normal except for the large cellular parenchymatous adenoma of the left lobe. Excision has been followed by striking relief of the patient's symptoms. Secondary hyperplasia within the adenoma has been reported on not a few patients in this series.

There are, however, other patients who have severe hyperthyroidism whose thyroid glands show hyperplasia with a coincident discrete ade-

noma. In these cases it is necessary not only to remove the adenoma but also to do a subtotal thyroidectomy to effect a cure. Clinically these patients show the evidences of more severe toxicity than the usual patient having only an adenoma as the cause of the trouble. The metabolism is high—frequently above +40—and the case resembles exophthalmic goiter on examination. At operation one finds on exposure of the thyroid that the gland area not involved by the adenoma is made up of the typical hyperplastic tissue that is associated with exophthalmic goiter. The removal of most of this tissue as well as the adenoma is necessary to cure the patient of toxicity.

The fact that cancer may develop in an adenoma that has been without symptoms for years

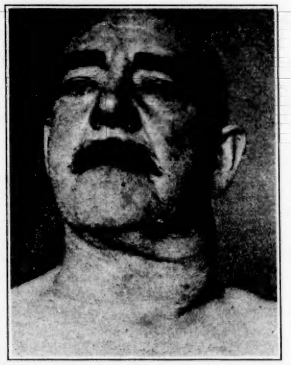

FIGURE 3. Man, aged 60 years, with adenoma of the thyroid which had grown rapidly in past 6 months and was the seat of extensive malignant degeneration. Earlier operation would have increased the chances of cure.

cannot be too strongly emphasized. Cancer is not a rare complication of goiter since at least 2 per cent of malignancy is commonly seen in most goiter clinics. It is, of course, generally recognized that the vast majority of these cases—certainly over 90 per cent—are found on preexisting adenomas. In our recent series of 62 patients having a discrete thyroid adenoma 6, or over 10 per cent, showed malignant degeneration. This figure is probably high as an index of the frequency of malignancy in thyroid adenomas, but there is no doubt in our minds that the patient with a discrete thyroid tumor has at least five or six chances in a hundred that cancer will develop in it.

We wish briefly to relate two typical histories of the patient who has cancer of the thyroid. The first is an example of the situation in which malignancy is unsuspected by the clinician and is found only by the pathologist.

CASE No. 338. R. H. H., aged 54 years, seen on September 10, 1935, complained of a symptomless goiter present for 20 years and showing recent growth. There was an orange-sized movable swelling in the right lower neck. At operation a 7 cm. firm adenoma was found to occupy the major portion of the right lobe of the thyroid. At the upper pole of the lobe there was a small, hard adenoma 1 cm. in diameter which raised the suspicion of malignancy. Both adenomas were removed. The left lobe appeared normal. Microscopic examination showed fetal adenoma and papillary adenocarcinoma.

Recovery was good, and a series of 15 x-ray treatments (totaling 4000 R) was given with the 200 K. V. machine, through three portals, to the bed of the thyroid. At the end of 7 months (April 15, 1936) examination showed the patient to be in excellent condition with no evidence of recurrence.

This patient has, we believe, an excellent prognosis since the tumor was removed very soon after evidences of malignant change appeared. He would have been far better off if the adenoma had been removed at any early period of its 20 year life.

The next case report is typical of the patient who has an adenoma for years which begins to grow and who even then postpones treatment. Earlier removal in this woman would have given a good prognosis. At present her chances of a return of malignancy are, in our opinion, very large.

CASE No. 839. Mrs. M. L., aged 61 years, had had a swelling in the left neck for over a year. In the last 3 months symptoms of choking, fatigue with talking and change in tone of the voice occurred. Examination revealed a firm adenoma of the left lobe of the thyroid, discrete and apparently well encapsulated. At operation, however, it was found that malignant degeneration was present. The capsule was involved posteriorly by the malignant process. Radical removal of the left lobe was carried out, with normal recovery. The pathologic report showed papillary adenocarcinoma. An intensive course of x-ray treatment is now being given.

The constant repetition of experiences such as these makes us feel very strongly that the medical man today must recommend the removal of discrete thyroid tumors in order to prevent thyroid cancer. With our present knowledge no other course is open in dealing with these cases.

Unsightliness of goiters especially of the asymmetrical adenoma type is well recognized and in our opinion is an adequate indication for their removal. In good risk patients having a benign adenoma we believe there should be no mortality associated with the surgical removal and our experience with these cases permits us to feel free to advise operation with this knowledge.

Pressure on the structures of the neck is a frequent complication with discrete adenomas of the thyroid. The larynx and trachea are commonly affected as the adenoma rotates the larynx and narrows the diameter of the trachea by pushing it from the midline. Difficulty in swallowing, curiously enough, is extremely rare even

with very large thyroid tumors. Dysphagia occurs when a sudden swelling of the thyroid arises or when there is malignant degeneration which has fixed the pharyngeal or esophageal wall. Changes in the voice and paralysis of a vocal cord rarely, if ever, are seen except in the presence of malignant degeneration of the adenoma which has invaded the area of the recurrent laryngeal nerve. Weakness of the voice or hoarseness accompanying a thyroid adenoma are of serious prognostic significance.

SUMMARY

In an experience with several thousand goiters, we have been impressed with the frequent occurrence of various complications arising in thyroid adenomas. A categorical study of the complications found in the authors' recent cases has been made.

CONCLUSIONS

1. The solitary discrete adenoma does not arise as a result of degenerative processes as does the multiple colloid adenomatous goiter. It should be regarded as a tumor arising in an otherwise normal thyroid gland.
2. The serious menace of the discrete adenoma should not be evaluated by its effect on the metabolism, which usually is slight. This should but rarely enter into the decision regarding treatment.
3. The thyroid adenoma inclines in structure toward the different developmental stages of the normal gland.
4. Adenomas may be classified as either parenchymatous or colloid in form.
5. Opinion favors the origin of adenomas from the epithelium of preexisting follicles in the normal thyroid gland, rather than from rests of embryonal epithelium.
6. Hemorrhage into the adenoma (5 cases) and malignant degeneration (6 cases) were the commonest complications found in the authors' series (62 cases).
7. Strumitis is more frequently found in areas of endemic goiter and is rare in this part of the country.
8. Clinical evidence of hyperthyroidism occurred in three patients with discrete adenomas. Secondary hyperplasia within the adenoma was reported in several patients.
9. Cancer arising within a discrete "fetal" adenoma may occur with unexpected and tragic frequency. Delay in removal of the adenoma will, in not a few patients, invite disaster.
10. Injury to the recurrent laryngeal nerves by benign pressure is an extremely rare finding. The development of voice changes in the patient with a thyroid adenoma is of serious significance.

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FOREIGN BODIES IN THE AIR AND FOOD PASSAGES*

A Report of Nine Recent Cases

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IT is not the purpose of this paper to present any new discussion of foreign bodies in the air and food passages, or even to attempt in a minute way to rival the tremendous series of over three thousand such cases reported by Chevalier Jackson and Chevalier L. Jackson.‡ We feel, however, that it is of great importance to keep constantly before the eyes and in the minds of the general medical profession the significant role played by foreign bodies in infants and children as the cause of chronic bronchitis, unresolved pneumonia, laryngitis, chronic bronchiectasis and even atypical asthma.

The presence of a foreign body in the upper air or food passages is not always disclosed by a carefully elicited history, even in a suspected case, and at the same time is not always necessarily revealed by the searching eye of the x-ray —valuable as that procedure may be. Needless professional embarrassment, as well as inaccurate

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‡Diseases of the Air and Food Passages of Foreign Body Origin. Philadelphia: W. B. Saunders Co., 1936.

diagnosis, with the resulting less commendable and often detrimental treatment of such a case, may be avoided by continually bearing in mind the not unduly rare ingestion or aspiration of a button, safety pin, tack or peanut by the infant or child. In any case of chronic bronchitis, bronchiectasis, unresolved pneumonia or asthma, the presence of a foreign body in the bronchial tree must be carefully considered. In any case of supposed laryngitis or even common croup, cyanosis, dyspnea, inspiratory stridor, or unexplained dysphagia, a safety pin, button, peanut or other foreign body must be thought of. Often the presence of a foreign body may be entirely overlooked after several months or years have elapsed, when the acute symptoms have subsided and when the clear details of an otherwise accurate history have long since vanished. According to Chevalier Jackson, "the most important thing to remember as to symptoms (of foreign bodies) is that there may be *no* symptoms at all at the time the patient is seen. There is a 'symptomless interval' after the initial symptoms, in nearly all cases. The interval may be only of a few hours in the case of a vegetal foreign body in the bronchus of a baby; it may be many months in the case of a non-obstructive metallic substance in the bronchus of a patient of any age."

The presence of such foreign bodies in the respiratory or upper digestive tract is not of infrequent occurrence, especially when the total number of admissions to any children's hospital is considered. We feel that this fact is not fully appreciated by practitioners not primarily dealing with infants and children, for, if it were, many such patients would not be treated so long without improvement. Needless to say, if the possibility of foreign body is always borne in mind and adequately and conscientiously traced down, the patient will be given the tremendous benefit of early removal, before further damage is done, and the physician will thereby be rewarded by the satisfaction of having offered to the patient and the family his best and most valuable service.

During a short four months' period (December 1, 1935, to March 31, 1936) there were admitted to the Ear, Nose and Throat Service of The Children's Hospital in Boston, nine cases of foreign bodies, either in the larynx, bronchi or esophagus, all of which were successfully removed. It is our purpose to report these cases in the hope that they may serve as a reminder that the aspirated or ingested foreign body is an omnipresent and often troublesome factor.

CASE REPORTS

1. R. F. (191810). Age, 2 8/12 years. Female. This patient was admitted on December 1, 1935, because of difficulty in swallowing of 16 hours' duration. Her family history was unimportant. Except for otitis media, scarlet fever and ulcerative stomatitis, her past history was essentially negative. Sixteen hours before admission, while playing at home with some coins, she was noted suddenly to gag, choke and vomit. From then on she was unable to swallow any solid food offered, but could take liquids fairly well. No cyanosis or respiratory difficulty was observed. Physical examination was essentially normal. X-rays showed two coins superimposed in the upper esophagus—one the size of a penny, the other of a nickel. The lungs showed a slight amount of peribronchial congestion, compatible with a bronchitis.

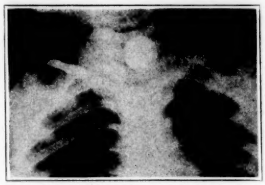

FIG. 1. (Case 1) A-P film shows coin in esophagus.

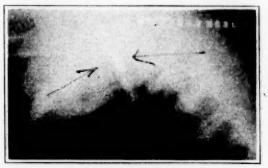

FIG. 2. (Case 1) Lateral film shows two coins superimposed.

On the day of admission esophagoscopy was performed under avertin anesthesia, and the two coins were easily removed with alligator forceps. The patient had no reaction to the operation and was discharged improved 2 days later on December 3, 1935.

Comment—This case illustrates among other things the importance of taking both anteroposterior and lateral plates when dealing with a suspected foreign body. In this instance these coins were superimposed. Had only an anteroposterior film been taken, the penny would have been obscured by the nickel. A foreign body, the plane of which coincides with that of the body, is usually found to be in the esophagus, while one lying in the anteroposterior plane is more apt to be found in the larynx or trachea.

2. D. H. (197873). Age, 2 7/12 years. Male. This patient was admitted on December 20, 1935, because of persistent cough, associated with wheezing, and an asthmatic type of respiration of 2½ weeks' duration. The patient's uncle, one grandfather and a great-grandmother were all subject to asthmatic attacks. In infancy the child had been treated for eczema. Two and a half weeks before admission the child suddenly coughed, choked and gagged while eating some nuts. This attack was associated with momentary cyanosis. During the following 2½ weeks there was persistent, dry cough without fever, but associated with definite wheezing

respirations on occasions. There was no inspiratory stridor and no difficulty in swallowing. Physical examination on admission revealed a slight generalized lymphadenopathy. Examination of the chest showed the breathing to be normal, except for interruptions every few minutes by paroxysms of coughing. On expiration the left side of the chest was noted not to collapse, while inspiration appeared normal. On percussion the entire left side of the chest was so generally hyperresonant that the cardiac dulness was completely obliterated. On the left there were coarse râles on coughing, with diminution of voice sounds throughout. X-rays showed obstructive emphysema with generalized hyperaeration of the entire left chest.

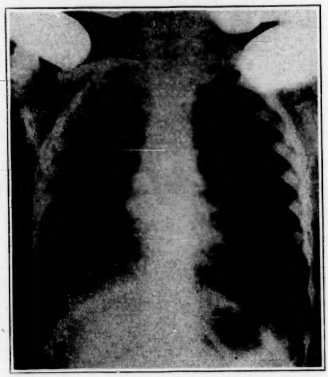

FIG. 3. (Case 2) A-P film shows obstructive emphysema on left, due to a nut in the left main bronchus.

On the day after admission, under pentobarbital and avertin anesthesia, bronchoscopy was performed and a piece of peanut was found almost completely occluding the left main bronchus and acting as a "ball-valve". The first grasp with the "peanut forceps" resulted in removal of only the skin of the nut. The rest of the foreign body was removed in two pieces. The following day the patient's temperature rose to 103° F., but came promptly down to normal and remained so until 4 days later. At that time the child developed a very mild, but definite, scarlet fever and was transferred to the Isolation Service. Physical examination of the chest at that time was negative. X-rays of the chest taken 3 days after transfer (7 days postoperative) showed the lungs to be evenly expanded with no further evidence of foreign body. As the scarlet fever was very mild, the child was allowed to go home on December 28, 1935, 8 days after admission to the hospital.

Comment—This case presented both a family history and also a past history suggestive of allergy. The present illness was characterized by an asthmatic type of respiration, with wheezing and a paroxysmal cough. However, the very fact that these symptoms followed an attack of coughing while eating peanuts and that the physical signs in the chest were those of an obstructive emphysema demanded very careful investigation of the bronchial tree for the etiologic factor. A peanut, being a vegetal body, is unfortunately not revealed by x-ray. Yet bronchoscopy is definitely indicated and in fact, should be insisted upon. In unexplained asthma, then, the etiologic factor may be a peanut. This case also illustrates the importance of taking a foreign body story at its face value.

3. O. C. (190255). Age, 2 9/12 years. Female.

This patient was admitted on December 21, 1935, because of substernal pain of 5 hours' duration. Her family and past history were unimportant. Five hours before admission the child swallowed two safety pins. There was no cyanosis, choking or difficulty in breathing. No attempt had been made to feed the patient. X-rays at another hospital 1 hour later had revealed one open and one closed safety pin in the esophagus. Physical examination on admission was essentially normal. X-rays showed the two pins at the level of the second thoracic vertebra in the esophagus. Both were placed with their points down.

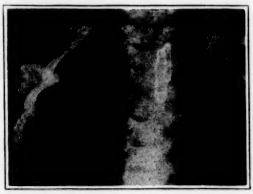

FIG. 4. (Case 3) A-P film shows one open and one closed safety pin in the esophagus.

A few hours after admission esophagoscopy was performed under ether anesthesia, and each pin separately removed. The patient's course was entirely uneventful, and she was discharged improved on the following day, December 22, 1935.

Comment—This case illustrates the comparatively easy manner of removal and the calm postoperative course of a patient who is seen early. A safety pin that is open with the point up may prove to be a very dangerous factor. Its removal is also much more difficult, and the serious complications are more frequent the longer it is allowed to remain. Mediastinitis following the ingestion of an open safety pin is not uncommon.

4. B. C. (198459). Age, 18 months. Male.

This patient was admitted on January 18, 1936, because of inability, for 24 hours, to swallow anything but liquids. His family and past histories were negative. Twenty-four hours before admission the patient had swallowed a button about 2.5 cm. in diameter. At the time there was slight gagging and choking, but no cyanosis or difficulty with respiration. Cough on lying down persisted, and the child choked and gagged when offered solid food. He was able to swallow liquids without difficulty. X-rays taken outside showed the button in the esophagus. Physical examination on admission showed evidence only of a mild upper respiratory infection with a temperature of 101° F. X-rays showed a button

about 2.5 cm. in diameter lying transversely in the esophagus at the level of the first rib.

A few hours after admission esophagoscopy was performed under avertin anesthesia, and the button was easily removed with alligator forceps. The patient's temperature gradually came down to normal, and his respiratory infection improved. He

FIG. 5. (Case 4) A-P film shows a button in the esophagus.

showed no reaction to the operation. Three days later, on January 21, 1936, he was discharged improved.

5. L. P. (199172). Age, 10 months. Male.

This patient was admitted on January 24, 1936, to the Infants' Hospital because of difficulty in breathing for 11 days. His paternal grandfather suffered with asthma. The patient's past history was essentially normal. Eleven days prior to admission, while eating some crackers, the child choked, gagged and vomited, but there was no cyanosis or dysphagia. Following this episode he had considerable difficulty in breathing and progressive hoarseness, associated with gasping inspirations and retraction of the chest. When the patient was placed in a supine position, he choked and gasped for breath. From this time on a troublesome, dry, hacking cough had persisted. The family thought the child had severe croup, but no medical attention was given. On admission the patient was in marked respiratory distress, exhibiting both inspiratory and expiratory stridor to a marked degree.

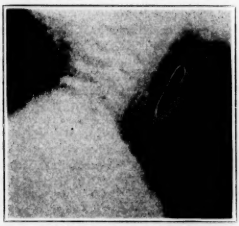

FIG. 6. (Case 5) A-P film shows an open safety pin in the larynx, half above and half below the glottis.

There was no cyanosis. On inspiration marked retraction of the sternum was noted. The lungs, except for an occasional moist râle, were normal. X-rays on admission showed a small, open safety pin in the larynx with the point upward and forward. Half of the pin was above the glottis and half below. The lungs and abdomen were negative.

A few hours after admission under avertin anesthesia laryngoscopy was performed. A small gold safety pin was easily removed. There was no bleeding. During the 24 hours after operation there was no change in the dyspnea or hoarseness. The following day his condition was much improved, and his hoarseness and dyspnea were completely cleared. There was no further evidence of obstruction. He was discharged improved on February 1, 1936, 8 days after operation. At this time his voice was normal, and respiration was without difficulty.

Comment—This case illustrates the fact that a foreign body as large and as sharp as a safety pin may remain in the larynx for nearly 2 weeks with relatively mild symptoms. As noted above, a foreign body in the larynx is usually found lying in the anteroposterior plane. Further questioning of the mother revealed no evidence of aspiration of the pin, and the mother had no idea where it came from.

6. C. G. (107088). Age, 20 months. Male.

This patient was admitted on January 31, 1936, because of cough of 8 months' duration. His family history and past history were negative. For the previous 8 months the patient had been suffering from a persistent, dry, hacking cough, with no initial history of dyspnea, choking or cyanosis. He was referred into the Medical O. P. D. for a complete

FIG. 7. (Case 6) Lateral film shows the tack in the bronchus.

FIG. 8. (Case 6) A-P film shows an upholstery tack in the left main bronchus about 3 cm. below the bifurcation.

medical workup as a case of chronic bronchitis or asthma. There, skin tests for protein sensitivity and an intradermal tuberculin (1:1000) test were negative. An x-ray of the chest showed clearly an upholstery tack, point upwards, in the left main bronchus about 3 cm. below the bifurcation of the trachea. Physical examination on admission showed

very slight diminution of breath sounds over the left chest posteriorly, with many, coarse, bilateral râles. There was no difference in expansion or resonance.

A few hours after admission under avertin-ether anesthesia bronchoscopy was performed, and the tack was removed. It was found to be imbedded in a fairly dense mass of granulation tissue on the bronchial wall. The patient's cough persisted for several days following operation, during which time he ran a moderate elevation of temperature. A chest plate taken 3 days later showed slight, rather fine, flocculent, peribronchial infiltration on both sides. Otherwise, the lungs were essentially clear. His cough gradually cleared up, and his temperature came to normal. He was discharged improved 9 days after operation on February 9, 1936. He was then free from symptoms.

Comment—This case clearly illustrates the fact that oftentimes no history of coughing, gagging, choking, dyspnea, cyanosis, vomiting or difficulty in breathing can be elicited. The tack removed was one belonging in the upholstery of the patient's carriage. He had not been in the carriage for 8 months, and before that had been known to try to pull out the tacks. Looking backward, the mother recalled that one tack had disappeared shortly before his symptoms had developed. The appearance of the tack and the bronchus at the time of operation was compatible with at least an 8 months' story. This case also illustrates the fact that a foreign body as large as a long upholstery tack may remain in a bronchus without the production of definitely acute symptoms. It also reveals the importance of early x-ray in any unexplained chest condition. Had this been taken soon after the development of symptoms, a great deal of unnecessary trouble might have been avoided. Bronchoscopy at that time would have been easier and less serious.

7. J. B. (199344). Age, 3 4/12 years. Female.

This patient was admitted on February 6, 1936, to the medical service because of wheezing respirations for 4 months. Her family history was negative. Except for occasional attacks of tonsillitis, her past history was also negative. Four months before admission she developed an upper respiratory infection, for which nose drops were used. One day the dropper was found to be broken at the tip, and the child insisted she had bitten it. Two days later she developed a wheezing type of respiration, which continued to the time of admission. One month following the beginning of symptoms she developed a cough and was acutely ill with high fever, dyspnea and wheezing respiration. She remained in bed for 1 month. From then on she lost weight steadily. Four days before admission she developed signs of another respiratory infection. The attack for which she had remained in bed for 1 month had been diagnosed as pneumonia. On admission the patient was breathing with a marked wheeze and had a loose persistent cough. Her nose was running, and her tonsils were large and red. Examination of the chest showed some diminution of motion of the right side on inspiration. The upper portion of the right chest was hyperresonant, with dulness and diminished breath sounds over the right lower lobe. There were râles and rhonchi over both upper lobes. The liver was 2.5 cm. below the costal margin. X-rays and fluoroscopic examination showed the entire right lung to be hyperaerated, apparently due to incomplete blocking of the right main bronchus—the findings of obstructive emphysema. There was considerable coarse peribronchial infiltration and congestion radiating from both hila. The bronchi at the bases appeared dilated and surrounded by circumscribed zones of dense peribronchial thickening compatible with bronchiectasis.

While on the ward her temperature ranged around 100°F. A general workup, including a tuberculin test, was otherwise not remarkable. One week after admission, under avertin anesthesia, bronchoscopy was performed. The bronchial mucosa on the right appeared red and thickened. A moderately large area of soft granulation tissue was seen in the right main bronchus. This was removed with small grasping

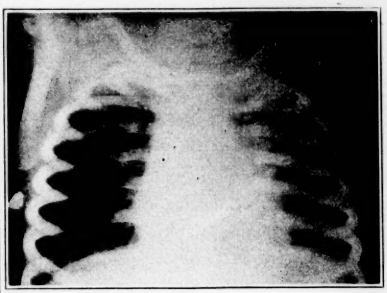

FIG. 9. (Case 7) A-P film shows obstructive emphysema on right, due to incomplete blocking of right main bronchus (foreign body).

forceps. It was found to contain a small triangular, yellowish, fairly hard bit of foreign material, measuring 4 by 4 mm. and resembling a bit of celluloid. On pathologic examination, after various chemical tests had been performed, it was suggestive of some fibrous and cellular plant material. Following removal, there was a moderate amount of bleeding, which was controlled with cocaine and adrenalin. Two days after operation x-rays showed the same congestion about the hila, as well as a rather localized area of increased density in the right lower portion of the lung, medially. The right side was still more aerated than the left, but fluoroscopically air was seen to go in and out on both sides. Her general condition improved a great deal and the signs of emphysema were much less marked. Two weeks after operation, on February 27, 1936, she was discharged improved.

Three weeks after discharge she was seen in the O. P. D., where it was noted that she had gained 3 pounds. Her wheezing respirations and a slight cough had persisted. Accordingly, for this reason, she was readmitted on March 12, 1936. At this time the right chest was found to be dull at the base with marked suppression of breath sounds, but no râles. There was suppression of breath sounds over the anterior portion of the right chest, low down. X-rays at this time still showed rather flocculent peribronchial congestion on both sides medially and an area of fairly dense residue over the right middle lobe, somewhat less than when seen before.

Two days after admission, under avertin anesthesia, bronchoscopy was again performed. Low down in the right main bronchus a fairly large, firm,

fibrous, organized blood clot was seen and removed with the grasping forceps. The rest of the bronchial tree was found to be clear. Following this a great deal more air was noted to be going into the right chest. X-rays taken 3 days later still showed a fairly dense infiltration at the right base, most marked posteriorly. There was also a rather flocculent reaction at the left hilum. Her wheezing respirations cleared up, and her temperature remained normal. Her cough improved, and her general condition was better. Because of exposure to measles, she was discharged home on March 21, 1936, to return to the O. P. D. for further follow-up.

Comment—No foreign body composed of glass was found at any time. The signs, however, were those of an obstructive emphysema, because of which bronchoscopy was performed. An actual foreign body was seen and removed, with partial relief of symptoms. Apparently the bleeding from the first operation had been enough to form a clot, which later became organized and acted as a second foreign body, producing the same signs and symptoms as previously. After this clot was removed, examination showed that one portion of it was encircled by a narrow depression, as if it had been forced into one of the bronchi. This case also illustrates the importance of a thorough and very careful physical examination of the chest, followed by well taken and accurately interpreted x-ray plates, in any case of supposed pneumonia that has not resolved in the usual time or that has not followed the normal course. Wheezing respirations that come on rather suddenly in a child who has shown no earlier allergic background are very suspicious of foreign body. Unfortunately, the nature of this foreign body was never determined. Whether this case had gone on long enough to produce bronchiectasis remains to be seen.

8. A. R. (199560). Age, 20 months. Female. This patient was admitted on February 27, 1936, because of fever and "unresolved pneumonia" of 5 weeks' duration. Her family history was negative. The patient was one of twins. Her past history was essentially normal. Nine weeks before admission the patient had a sudden coughing spell, but there was no history of choking on a foreign body. This occurred while the patient was in Florida. She seemed to improve after a week, and the local doctor said the girl had had an attack of acute bronchitis. Four weeks later the child became worse and developed cough and fever again. She was taken to a hospital in Florida, where she was supposed to have had pneumonia in the left lung. She remained there 11 days, during which time three blood transfusions were given. A chest tap was performed for a suspected empyema, but no fluid obtained. Five days before the present admission, the patient returned to Boston and, at the same time, had another recurrence of symptoms, with fever, cough and general malaise. During the preceding 6 weeks she had lost considerable weight and the cough had continued. Examination on admission showed a small, cachectic child, who appeared chronically ill. Her tonsils were enlarged and chronically injected. Examination of the chest showed hyperresonance over the upper portion on the left side, with marked suppression of breath sounds and slight dulness at the base. There were no râles. The right lung was clear. The spleen was palpable two fingerbreadths below the costal margin, and the liver one fingerbreadth. Her temperature averaged about 100°F. The white blood cell count was 26,000 per cmm. Her urine contained many pus cells. X-rays at the time of admission showed a large amount of fairly dense, mottled infiltration at the left base, with hyperaeration of the left upper lobe. There was moderate displacement of the heart to the left. According to the roentgenologist the picture suggested the end-result of occlusion of the left lower lobe bronchus, with consequent bronchiectasis, and partial occlusion of the bronchus to the upper lobe.

Two days after admission bronchoscopy was performed under avertin anesthesia. The bronchial mucosa was red and slightly edematous. In the left lower lobe bronchus there was a fairly large amount of thick pus. After this was suctioned, a piece of peanut, which was seen low down in the bronchus, was suddenly coughed up through the bronchoscope. No further trace of a foreign body could be seen. Following operation the signs in the chest seemed to improve, but did not entirely clear. She continued to run some fever, but had a definite pyelitis. X-rays, taken 2 days after operation, showed less hyperaeration of the upper portion and less mottling of the lower portion than before. The signs did not entirely clear, however, so a repeat bronchoscopy was done 10 days after the first. The left bronchus still contained pus. A very small, narrow sliver of peanut was removed with the peanut forceps. The right bronchus appeared normal. Four days later x-rays still showed a moderate amount of rather dense infiltration at the extreme left base and less peribronchial infiltration in the midportions than before. She still continued to run a low grade fever, associated with a few white blood cells in her urine. The signs in the chest improved but did not entirely clear. After her temperature had been normal for 4 days and her urine free from pus, she was discharged, on March 24, 1936, because of exposure to measles. She was to return to the O. P. D. to be followed.

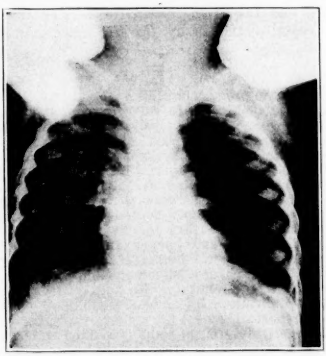

FIG. 10. (Case 8) A-P film shows obstructive emphysema on left, due to a foreign body in the left main bronchus (peanut).

Comment—This case, among other things, illustrates the importance of a careful history,

physical examination and accurately interpreted x-ray plates. If there are signs of obstructive emphysema, the source of the obstruction must be determined by bronchoscopy. It is surprising that such very minute bits of foreign material as the tiny sliver of peanut removed at the second bronchoscopy are not coughed up. Though these bodies may be small, the bronchial tree is unable to take care of them, and they remain as sources of continued irritation and the causes of later bronchiectasis. The longer the foreign material is allowed to remain in the bronchial tree, the more rapidly progressive is the bronchiectatic process. Needless to say, the treatment of bronchiectasis is long and complicated and far from satisfactory. For this reason, prophylaxis is by far the more important factor.

9. R. L. (199747). Age, 2 5/12 years. Male. **This patient was admitted on March 21, 1936, because of abdominal pain following the ingestion of a button 48 hours previously. The family history showed that the paternal grandmother had diabetes. The patient's past history was normal. He had been born with a right inguinal hernia, but, except for local swelling, it had never caused him any trouble. He had worn a truss from early infancy. Forty-eight hours before admission the child put a large button into his mouth, and suddenly coughed, choked and gagged as he swallowed it. Following this he vomited. Since that time he had complained of vague abdominal pain, but there had been no further vomiting. He had been able to eat without difficulty. On admission physical examination was normal, except for a slightly injected throat and a moderately large right inguinal hernia, which was supported by a truss. X-rays on admission showed a large button lying transversely in the esophagus at the level of the sternoclavicular joints.**

One-half hour after admission, under avertin anesthesia, esophagoscopy was performed. A 1 inch pearl button was removed without difficulty from

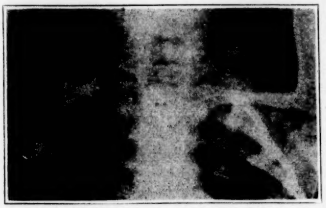

FIG. 11. (Case 9) A-P film shows a button in the esophagus.

the esophagus. Following operation the patient had no reaction whatever. He complained of no further pain in the abdomen and had no vomiting. He continued to eat well. Two days later, on March 23, 1936, he was discharged improved.

Comment—It is surprising that a button of this size should remain so high in the esophagus for as long a period as 2 days without producing more difficulty in swallowing. Apparently the child was able to eat normally, and for this reason the mother had expected that the button had passed on down through the intestinal tract. The only symptoms were vague abdominal pains, and the failure to recover the button. The button, as is the case with esophageal foreign bodies, was found in a transverse position.

THE VALUE OF HISTOLOGIC DIFFERENTIATION OF BASAL CELL CARCINOMAS*

BY SHIELDS WARREN, M.D.,† OLIVE GATES, M.D.,† AND PAUL W. BUTTERFIELD, M.D.†

EVER since the recognition of the relatively benign course of rodent or Jacobean ulcer and its differentiation as a basal cell carcinoma by Krompecher[1] there has been much discussion among pathologists as to the proper classification of cutaneous carcinoma other than the epidermoid and adenocarcinoma groups. It is generally accepted that the tumors arise from the basal layer of epithelial cells. However, finer subdivisions based on suppositions as to their origin from skin or its appendages have caused considerable confusion and disagreement.[2, 3, 4] It is the purpose of this study to attempt a correlation of the histologic appearance and clinical behavior of these tumors.

The tentative histologic grouping used in this paper is based on a microscopic study of 2,500 skin carcinomas. The details of this study will be reported elsewhere.

Epidermoid and adenocarcinomas are not included in this study. The remaining types are divided into five groups:

1. Basal cell carcinoma.
2. Basal cell carcinoma with foci of keratinization.
3. Mixed basal cell and epidermoid carcinoma.
4. Hair matrix carcinoma.
5. Cystic basal cell carcinoma.

The basal cell carcinoma is made up of uniformly spindle-shaped cells in compact clusters which vary widely in size and architecture.

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Palisade arrangement of the peripheral cells of the masses is a characteristic feature. The tumor often appears to be multicentric in origin, having several distinct points of growth from the overlying skin and occasionally from skin appendages. Intercellular bridges may be present, but are rare. Occasionally melanin occurs in varying amounts. The nuclei are oval with rather finely divided chromatin. Mitoses vary in number, but are rarely more frequent than five per 1,000 cells.

The basal cell carcinoma with foci of keratinization is identical with the basal cell carcinoma except for the existence of well-formed epithelial pearls with keratin or parakeratin in the centers of many of the cell clusters.

The mixed epidermoid and basal cell carcinoma is, as its name implies, merely a combination in varied proportions of epidermoid carcinoma and basal cell carcinoma. The epidermoid portions are not always well keratinized and may be relatively undifferentiated. In the majority of cases it probably does not represent a further stage of development of the basal cell carcinoma with foci of keratinization. It is rather a tumor in which the growth differentiates both as keratinized and nonkeratinized epithelium. There are a few tumors of basal type which merge into undifferentiated carcinoma without keratinization.

In the hair matrix carcinoma, the hair follicle structure is reproduced with varying degrees of faithfulness. This group we restrict to those tumors with formation of branching clusters of epithelial cells, continuous with skin and often with preexisting hair follicles; in the centers of many of these cell masses, a distinct whorl-like arrangement of the cells with some keratinization simulates shaft formation. The complete development of hair follicle structure in all its stages has not been reproduced in any of the tumors studied. Such adult follicles as may be present within the bounds of the tumor we regard as inclusions. The large amount of pigment seen in some of these tumors may cause difficulty in differentiating them and melanomas. The hair matrix carcinoma has points in common with the basal cell carcinoma with foci of keratinization, and many of the latter may in reality be of hair matrix origin with marked keratinization of abortive follicles.

In the fifth group, which is less well defined than the others, we have included those tumors which are identical with the basal cell carcinoma except for the presence of an unusual number of large or small cysts. These cysts are usually quite clearly the result of degeneration of either tumor or stroma, although in some instances their origin is difficult to determine. It must be remembered that degeneration is common to all these tumors, and cyst formation is

TABLE 1

DISTRIBUTION OF TUMORS IN 302 PATIENTS

Location	Basal Cell Carcinoma			Basal Cell Carcinoma with Foci of Keratinization			Mixed Basal Cell and Epidermoid Carcinoma			Hair Matrix Carcinoma			Cystic Basal Cell Carcinoma			Total		
	Sex		Total	Sex		Total	Sex		Total	Sex		Total	Sex		Total	Sex		Total
	M	F	Tumors*	M	F	Tumors	M	F	Tumors	M	F	Tumors	M	F	Tumors	M	F	Tumors*
Upper face	34	36	71	3	2	5	4	4	8	12	3	15	1	—	1	54	45	100
Ear	27	11	38	4	3	7	6	1	7	5	3	8	1	1	2	43	19	62
Nose	27	11	40	3	3	6	5	3	8	8	5	13	—	—	—	43	22	67
Upper lip	10	7	18	—	—	—	2	—	2	2	—	2	—	—	—	14	7	22
Lower face	6	3	9	1	1	2	2	—	2	2	—	2	—	—	—	11	4	15
Lower lip	3	—	3	—	—	—	1	—	1	1	—	1	1	—	1	6	—	6
Neck	5	3	9	2	1	3	1	—	1	1	1	2	1	—	1	10	5	16
Scalp	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Trunk	4	5	9	—	—	—	1	—	1	—	1	1	—	—	—	5	6	11
Extremities	1	2	3	1	—	1	1	—	1	1	1	2	—	—	—	4	3	7
Total	118	78	201	14	10	24	23	8	31	32	14	46	4	1	5	191	111	307

*Discrepancy in totals due to multiple tumors.

TABLE 2

RESULTS OF TREATMENT

Type and Location	Number of Cases				Alive without Disease				Dead without Disease				Alive with Disease				Dead with Disease				Per Cent 5 Year Cures
	H	O	Total	Total	H	O	Total	Total	H	O	Total	Total	H	O	Total	Total	H	O	Total	Total	
Basal cell carcinoma																					
Upper face	51	43	94		22	11	33		5	2	7		10	11	21		14	19	33		
Lower face	7	2	9		4	1	5		—	—	—		—	—	—		3	1	4		
Miscellaneous	8	1	9	112	7	1	8	46	—	—	—	7	—	—	—	21	1	—	1	38	41
Basal cell carcinoma with foci of keratinization																					
Upper face	3	4	7		1	—	1		—	1	1		1	1	2		1	2	3		
Lower face	1	—	1		—	—	—		—	—	—		—	—	—		1	—	1		
Miscellaneous	—	2	2	10	—	1	1	2	—	1	1	2	—	—	—	2	—	—	—	4	20
Mixed basal cell and epidermoid carcinoma																					
Upper face	6	10	16		—	3	3		2	—	2		2	1	3		2	6	8		
Lower face	2	1	3		1	1	2		1	—	1		—	—	—		—	—	—		
Miscellaneous	1	—	1	20	1	—	1	6	—	—	—	3	—	—	—	3	—	—	—	8	30
Hair matrix carcinoma																					
Upper face	13	5	18		6	—	6		1	1	2		2	2	4		4	2	6		
Lower face	1	1	2		1	—	1		—	—	—		—	—	—		—	1	1		
Miscellaneous	1	—	1	21	—	—	—	7	—	—	—	2	1	—	1	5	—	—	—	7	33
Cystic basal cell carcinoma																					
Upper face	1	—	1		1	—	1		—	—	—		—	—	—		—	—	—		
Lower face	—	—	—		—	—	—		—	—	—		—	—	—		—	—	—		
Miscellaneous	—	—	—	1	—	—	—	1	—	—	—		—	—	—		—	—	—		100
Total				164				62				14				31				57	38

H = First treatment at Huntington Memorial Hospital.
O = First treatment outside Huntington Memorial Hospital.

not exclusively characteristic of any one type.

The carcinomas of definite glandular origin are not included in this study.

The accompanying changes in the connective tissue surrounding the tumor, such as mucoid degeneration and hyalinization, are much the same in all groups.

In order to correlate the histologic structure with the clinical behavior of these tumors, the Huntington Memorial Hospital records of 321 carcinomas of the above groups, diagnosed microscopically, were studied. Three hundred and eleven tumors were taken in sequence from the hospital files. Eight patients had more than one tumor, 18 skin cancers occurring in them. Ten tumors were added to the groups of mixed basal and epidermoid carcinoma and of cystic basal cell carcinoma so that a more adequate number would be available for study.

The first table shows the distribution of the various groups of carcinoma, without the added cases. The largest proportion of tumors, 81 per cent, occurs on the face and ear above lines drawn from the angles of the mouth to the lobes of the ears. Aside from this well-established preference for the upper face, the tumors are scattered irregularly over the body. There are nearly as many tumors on the neck and trunk as on the lower face. It is of particular interest to note that, in the group of 50 hair matrix carcinomas, only five are located on the most active hair-bearing areas. The different groups of tumors have no site of predilection as compared with one another.

While epidermoid carcinomas of the skin are also numerous on the upper face, 402 occurring in our series of 882, or 46 per cent, this localization is only half as frequent as in the basal cell tumors.

The sex ratio in this series shows the usual 2 to 1 predominance of affected males. The significance of exposure is well brought out in the variation of the ratio for different parts of the body. On the trunk and extremities the incidence is the same in both sexes. On the face these carcinomas are about half again as frequent among males as females. The predominance of males is even more marked in the tumors of the ear, where the ratio of affected males to females is 2.3 to 1. Lacassagne's[5] figures show this sex variation in exaggerated form, 80 per cent of his cases of basal cell carcinoma of the forehead occurring in females and 90 per cent of those of the ear occurring in males.

Results of treatment are based on 164 tumors from 162 patients (table 2). The remainder did not have adequate follow-up and are not included. One patient had three basal cell carcinomas of the face, each with five year cures. Only 38 per cent had lived with no recurrence 5 years or more after their last treatment. If we discard from the total the fourteen cases dying without evidence of disease less than 5 years after the last treatment, the percentage of cures for the whole group rises from 38 to 43 per cent. Fifty-eight per cent of the 164 cases were first treated at the Huntington Memorial Hospital. Forty-six per cent of these were alive and well at the end of 5 years. Twenty-six per cent of the cases first treated elsewhere were alive and well at the end of 5 years. In 1919, Simmons[6] reported 72.5 per cent "immediate cures" in suitable cases treated with radium at this hospital.

For comparison a random group of 100 skin cancers of the upper face, treated by radiation alone, were studied. These cases were diagnosed clinically as carcinoma and no biopsies were taken. Thirty-seven per cent of the entire group were free from disease after 5 years. The lower percentage of cures is probably due to the inclusion of the more radioresistant epidermoid cancers with the basal cell types. Probably 38 per cent were epidermoid cancers, as in our experience that percentage of epidermoids of the upper face occurred among 2,323 skin cancers. This shows about the same percentage of cures among non-biopsied basal cell cancers, clinically diagnosed, as among those biopsied. In selected favorable cases a higher percentage may be obtained.

It must be recognized that considerable improvement in radiation therapy has occurred since many of these cases were treated. In gen-

TABLE 3

SIGNIFICANCE OF CLASSIFICATION

	Basal Cell Carcinoma	Basal Cell Carcinoma with Foci of Keratinization	Mixed Basal Cell and Epidermoid Carcinoma	Hair Matrix Carcinoma	Cystic Basal Cell Carcinoma
Average diameter at first treatment*	2.5 cm.	2.5 cm.	2.4 cm.	1.8 cm.	3.8 cm.
Average duration in months to first treatment*	60	43	35	75	147
Per cent 5 year cures†	41	20	30	33	100

*Based on 310 tumors.
†Based on 164 cases as in table 2.

eral, the cases irradiated were given one treatment with radon, ranging from 15 to 200 mc. hours, in glass or steel tubes at a distance of one centimeter. The larger lesions were usually given a second treatment. Recurrences were treated in similar manner. Gold seeds were sometimes implanted. Occasionally low voltage x-rays were used in hopelessly advanced cases.

In table 3, differentiation, size, duration and end results of the different tumors are correlated. Deductions must be drawn cautiously, as the series is small. However, the size of the lesion at first treatment and the duration to first treatment are based on 310 cases and so deserve some consideration. The two types approaching the epidermoid, the basal with foci of keratinization and the mixed basal cell and epidermoid, were of shorter duration than the others and gave poorer results. The relatively large size of the lesions when first treated accounts to some extent for the fewer cures in this series as compared with published data.

The slowly growing hair matrix carcinoma tends to form histoid structures. The prominence of melanin in these tumors also suggests the organoid tendencies of these more slowly growing carcinomas. The basal cell carcinoma without any definite tendency to structural development has slightly more active growth, but is closely allied to the former group. Unfortunately the group of cystic basal cell carcinomas is too small to be considered, though their large size and long duration are of interest.

One questionable instance of metastasis was encountered. This was a male of 64 years with a slowly growing hair matrix carcinoma of the inner canthus which was excised. Two years later a mass in the neck on the same side was biopsied and showed a highly malignant, nonclassified tumor. This probably represented a different cancer rather than a metastasis. Since metastasis is not a factor and local recurrence is frequent, the low percentage of cures hinges on inadequate therapy.

CONCLUSIONS

1. The origin of basal cell carcinomas, whether from skin or appendages, is of no clinical significance.

2. The form of differentiation indicates the degree of malignancy; differentiation as a basal cell tumor or hair matrix tumor indicates low malignancy, while differentiation toward epidermoid carcinoma is present in the more malignant tumors.

3. Biopsy of all skin tumors is essential for the establishment of rational treatment of skin carcinomas.

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THE PROSTIGMIN TEST IN MYASTHENIA GRAVIS*

Second Report

BY HENRY R. VIETS, M.D.,† AND ROGER S. MITCHELL, M.D.†

IN December, 1935, Viets and Schwab reported upon the value of prostigmin in the diagnosis of myasthenia gravis.[1] Five patients with myasthenia gravis were tested and, in addition, seven patients with other diseases simulating the myasthenic syndrome. A diagnostic schema was developed in order to tabulate the findings. After subcutaneous injection of 1.5 mg. (3 cc. of a 1/2000 solution) of prostigmin with atropine, grains 1/100, the patient was observed at the intervals of ten, twenty and forty minutes and one, two and three hours. An estimate was made in three categories—(1) "Subjective", relating to an increase in a general feeling of well-being on the part of the patient; (2) "General", indicating a decrease in paralysis of the larger muscle groups, such as those subserving grip, station and walking; (3) "Local", the objective findings in the smaller muscle groups, such as the extraocular muscles, those of the face, and the muscles used in talking and swallowing—on a scale of 0 to 4, 0 indicating no change, 1 slight, 2 moderate, 3 marked, and 4 complete change. The schema was made up with a possible total of 72.

We have now tested eighteen patients with myasthenia gravis, using the test twenty-seven times. There have also been tested twenty-seven patients with other diseases, one test being used on each patient. Of the positive cases, in the twenty-seven tests with a possible total point score of 72, the average has been 52. The lowest test was 17 in one case, but the next lowest was 32. The highest was 70. In general, the

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patients have shown tests between 30 and 70 and with such a score, these patients have been considered as examples of myasthenia gravis. Patients showing a rate of 15 to 30 would be classed in a doubtful group and those under 15 as suffering from some other disease.

In the twenty-seven patients with other diseases, on whom twenty-seven tests were performed, the average score was only 1.5. All the scores were between 0 and 8 and eighteen were 0. Five were 4 and one was 8. Thus, in our series of forty-five patients on whom fifty-four tests have been done, the twenty-seven negative cases were recorded as below 8 on the diagnostic schema. The other diseases which were tested covered a wide variety of neurologic and medical conditions. Six patients had progressive muscular dystrophy, two had recurrent ophthalmoplegia, one had progressive bulbar palsy, one progressive muscular atrophy, one carotid aneurysm, two neurasthenia with congenital ptosis, two postencephalitic Parkinson's disease, one Addison's disease, and the others were a scattered group of single cases.

In nine control patients a sterile saline solution was used in place of prostigmin without any effect on the muscular weakness. In four of the positive cases the electromyograms showed the characteristic changes of this disease.[2]

As we have had more experience with this test, certain modifications have been adopted. It is felt that a new schema should replace the old (fig. 1). In this the time interval has been put at ten and thirty minutes, one, two, four, six and eight hours. This is an extension of time from three hours to eight hours in order to estimate the prolonged effects of the drug. In one hour or less, however, the improvement is usually pronounced enough to make the diagnosis reasonably certain. As many patients with myasthenia gravis do not have involvement of the extremities, their disease being limited to the cranial nerves, it was not always possible to use that part of the old schema devoted to "General"—decrease in weakness of the larger muscle groups. This has now been dropped out of the schema and we record only the subjective improvement as noted by the patient and the objective changes observed by the physician, in many cases confined to improvement in the function of the cranial nerves. The new point total is 56. On this basis the average test on eighteen patients was 30. In conditions other than myasthenia gravis it was 1. This new schema will not in any way change our essential ideas about the value of the test. Secondly, we have adopted intramuscular injections of prostigmin for the test in place of the previously used subcutaneous injections, as the effect is greater, quicker and longer by this method.

Elapsed Time Following Injection	Objective Improvement in Muscular Paralysis	Subjective Improvement in Muscular Paralysis
10 mins.	3	2
30 "	4	4
1 hr.	4	4
2 hrs.	3	4
4 "	2	2
6 "	0	1
8 "	0	0
	Total:	33 points

FIG. 1. The Prostigmin Test. Method: 3 cc. (1.5 mg.) prostigmin (Roche) 1:2000 solution plus atropine sulphate gr. 1/100 intramuscularly. The typical response in a case of myasthenia gravis.

In conclusion, it should be pointed out that the profound change in muscular action under the stimulation of prostigmin in patients with myasthenia gravis and the absence of this change or its relative slightness in other diseases give us a valuable test for myasthenia gravis. A simple way of recording the results has been delineated.

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TREATMENT OF DELIRIUM TREMENS WITH SODIUM EVIPAL

BY PERRY SPERBER, M.D.*

LACK of a specific therapy for delirium tremens led me to experiment with various drugs in the hope of possibly finding one capable of terminating abruptly this alcoholic syndrome. The success obtained with sodium evipal has prompted this report. There was no reason to suppose that sodium evipal would solve the problem. Either it would produce its usual twenty minute anesthesia, as when given intravenously to produce surgical narcosis, or else it would add its name to the list of a host of other drugs that failed.

This work was carried out at a large Eastern penitentiary where several hundred alcoholics are admitted every year. Most of these men are chronic addicts and have served more than one term in prison for alcoholism.

A considerable number are seen by the physicians because of such complaints as nervousness, irritability, insomnia and tremors. Sedatives are administered, such as paraldehyde, bromides or one of the barbituric derivatives. The

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most satisfactory seems to be a combination of the triple bromides, grains 20, with phenobarbital, grains 3. This is repeated if needed. A small percentage, in spite of vigorous medication, go on to develop delirium tremens.

Once the syndrome is fully evident I have failed to see it stopped by any form of medication. The treatment is really one of watching, waiting and supportive measures until the attack runs its course or terminates in a complication.

The old textbook stand-by paraldehyde, is useless. Patients may be literally saturated with it by the intravenous route in large repeated doses and still show no regression of symptoms. The only visible effect is a short paroxysm of dyspnea. The oral administration is equally ineffective. In some patients paraldehyde may actually intensify the delirium.

Morphine even in large doses is valueless. It does not alter the course of events in the least. Some authorities believe it to be harmful saying that it adds to the cerebral edema already present.

Alcohol in the form of whiskey is both condemned and praised as a therapeutic agent. There are physicians who combine the whiskey with paraldehyde, first giving whiskey followed after an interval by paraldehyde. They feel that the period of the delirium is thereby shortened. Others are inclined to think that alcohol has no effect whatsoever and, for that reason, is useless to give. Some holding a still more pessimistic viewpoint say that the giving of whiskey to a delirium tremens patient is actually deleterious and the worst possible therapeutic procedure.

Various barbituric acid derivatives have been used for the control of the convulsive or excitement states that accompany certain neurologic and psychiatric disturbances. Meerloo[1] states that barbituric acid compounds have a specific sedative action on epileptic convulsions and Cline and Coleman[2] have used phenobarbital sodium intravenously in severe cases of delirium tremens which could not be controlled by paraldehyde. Evipan has been recommended by Kuntze[3] for quieting greatly excited psychiatric patients, but no reference to its specific use in patients with delirium tremens can be found in the literature. Many other drugs have been utilized at different times. Among them are chloral hydrate, the bromides, strychnine, apomorphine, ergot, nux vomica and hyoscine. None of these, however, will abort an attack.

In the wards of a prison or a large charity hospital, a delirium tremens patient is a serious problem. Where quiet is necessary, they are a distinct nuisance. At night they keep the ward awake. A physician is taxed to handle these people. It was in one of these episodes that I determined to try sodium evipal, feeling that if I could produce a twenty-minute anesthesia some of the ward patients would be able to fall asleep in the interim.

RESULTS OF EVIPAL THERAPY

The cases described below were all those with a fully developed delirium tremens. In each instance the patient had failed to respond to preliminary medication.

CASE REPORTS

CASE 1. A white male, aged 40 years, was admitted to the hospital in an active state of delirium, muttering and disoriented. Typical tremors were present. The tongue was furred. Hallucinations were of the visual variety. The patient remained afebrile. His past prison record and the general physical examination indicated a long-standing chronic alcoholism.

Restraints in the form of sheets were applied to keep the patient in bed. They were arranged about the shoulders, wrists, and legs, restricting the man but allowing moderate body movements.

It was decided to try sodium evipal on this case. The solution used was prepared in the usual manner by dissolving 1 gram in 10 cubic centimeters of sterile distilled water, thus producing a 10 per cent solution. It was necessary to have six men hold the patient reasonably still so that the injection could be given. Assuming the man to be right handed the left arm is the site of choice for the intravenous therapy. The reason is simply that it is a little easier to restrain the less muscularly developed extremity. One man held the hand at the wrist. A second controlled the forearm at the elbow and a third prevented movements at the shoulder. The other attendants controlled the legs and opposite side of the body. Body and arm restraint is the most important part of the technic, for a wildly delirious patient with a needle in his vein can inflict damage to the vein and soft tissues of his arm. Furthermore, one cannot inject an intravenous solution slowly into a motile shifting arm.

Two cubic centimeters (0.2 gram) were injected slowly. Suddenly the patient stopped his mad struggling and relaxed. He yawned lazily and then dropped off into a deep sleep. Another cubic centimeter (0.1 gram) was injected. I was amazed to see this struggling man sleeping so peacefully where a moment before six men were using all their force to try to restrain him. Gone were the tremors, muttering delirium and hallucinations. He was like any other patient under evipal narcosis. The bounding pulse returned to normal. The respiratory rate became normal. The intense sweating stopped. He was wiped dry and light blankets were applied.

I was surprised to see the anesthetic take hold, but was more anxious to see what would happen after the twenty minute narcosis time had elapsed. The time interval passed. He continued to sleep. After four hours the patient awoke for a brief time and asked for a drink of water. The psyche was dulled. He drank the water and then went off into a deep sleep from which he emerged twenty-four hours later. He had no recollection of the attack and was fully oriented and sensible. At no time was there a return of symptoms.

CASE 2. A white male, aged 45 years, was admitted to the hospital in a state of delirium tremens similar to the above. The same technic was used. Two cubic centimeters of 10 per cent sodium evipal were injected intravenously and after the patient

lapsed into a state of unconsciousness another cubic centimeter was injected. This man slept for two hours, awoke for a very brief interval, and then fell into a deep sleep that lasted for eighteen hours. Upon awakening he was fully oriented. There was no memory of the attack. No sign of the delirium tremens returned after the original induction of narcosis.

CASE 3. A white male, aged 52 years, was admitted to the hospital exhibiting the symptoms of delirium tremens as in the above cases. The same technic was utilized. Two cubic centimeters of 10 per cent sodium evipal were injected intravenously. Upon visualizing the induction of anesthesia another cubic centimeter was introduced. The patient slept for two and a half hours. He awoke for a very brief interval and then went to sleep for twenty-one hours.

When he awoke he was perfectly oriented and like the others could not recall the syndrome. A recurrence of symptoms did not occur.

Unfortunately I was unable to continue these experiments. Three cases constitute a very small series, yet I feel it incumbent upon myself to report the cases.

Ordinarily delirium tremens lasts from two to ten days with an average of five days. The sleeplessness which marks this period is followed by a deep sleep which continues without interruption from twelve to thirty hours. The patient upon awakening is sensible, free from hallucinations and correctly oriented. There is never complete remembrance of the syndrome, although some details can be recalled.

It can hardly be considered accidental when sodium evipal aborted three typical delirium tremens attacks. No other drug has done this in even one case. Evipal seems to have a specific action on the nerve centers involved. Ordinarily it acts for twenty minutes. In these cases it induced a sleep lasting for a period of two to four hours. This was followed by a deep sleep which persisted for eighteen to twenty-four hours. This latter period is not due to the drug but is the natural sequence of delirium. The patient catches up on his "sleep debt" as a result of exhaustion from the ordeal.

Uncomplicated delirium tremens has a 15 per cent mortality. If it is associated with such infectious diseases as pneumonia the outcome is apt to prove fatal. Following trauma it produces a 50 per cent mortality. The discovery of an abortifacient for an attack of delirium tremens would mean the saving of many lives every year. The results in this small series of patients suggest that the intravenous injection of sodium evipal may be a specific remedy. Positive conclusions can be drawn only from a large number of trials.

The observations are passed on to those of the medical profession who are engaged in the treatment of alcoholic victims. It should be interesting to see whether the drug will live up to its present apparent effectiveness. Furthermore, if it is found to be successful, it should be tried to see whether it will prevent the syndrome when administered in the predelirium state and whether it will exert a similar abortifacient action in acute alcoholic psychosis.

SUMMARY

Drug therapy in the past has failed completely to control delirium tremens, let alone abruptly terminate it. The mortality is 15 per cent in uncomplicated cases, 50 per cent when it occurs following trauma and even higher in the course of certain infectious diseases.

Sodium evipal immediately after intravenous injection in ordinary therapeutic doses aborted the attack in three typical cases. The patients fell asleep for a period of two to four hours. At the end of the initial period of sleep they awoke for a very brief interval, then returned to a deep sleep, the latter being the usual reaction following the natural ending of an attack of delirium tremens. On awaking, all were fully oriented and had no recollection of the attack. At no time was there a recurrence of symptoms.

The observations suggest that sodium evipal may be a specific remedy for delirium tremens and this small series of cases is reported in the hope that its true value will be determined by others. Its possible value as a preventive in the predelirium state and as an abortifacient in acute alcoholic psychosis is suggested.

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THE MANAGEMENT OF PATIENTS WITH VARICOSE VEINS*

BY EDWARD T. WHITNEY, M.D.,† AND PETER A. CONSALES, M.D.†

CONSIDERABLE confusion regarding the choice of procedure in the treatment of varicose veins exists at the present time. The current literature abounds with articles on the "ligation operation" for varicosities while results with new sclerosing solutions continue to be reported. Whether to perform preliminary ligation on all or only on selected cases or whether merely to inject every case is a question that naturally arises whenever a case of varicose veins is presented for treatment.

Ten years ago the only methods at our disposal for correcting venous stagnation in the lower extremities were supportive bandages and stockings, elevation and rest or radical surgical excision of the veins. However, when it was found that the same end could be achieved by injecting a sclerosing or obliterating solution into the vein, it was not long before such an ambulatory procedure became popular. But injections did not turn out to be wholly successful as sloughs occurred quite frequently, especially in the hands of the inexpert. A bewildering array of sclerosing solutions soon appeared all of which were occasionally followed by some form of general reaction, and the choice between single or multiple injections increased the confusion. In addition, experience soon revealed that recurrence was a fairly common thing no matter what solution or method was used.[1, 2] In order that this latter possibility might be prevented, ligation of the long saphenous vein at the sapheno-femoral junction was proposed.[3] This procedure complicated the picture still more as it caused the pendulum to swing back to operative procedures again.

This state of confusion has not been confined entirely to the practitioner treating an occasional case, for several large established clinics have closed their varicose vein departments only to reopen them again under some new system or régime.

The vein department at the Boston Dispensary was established eight years ago and has remained in constant service ever since. During these years newer methods, solutions and technic have been adopted and, in many instances, modified, but no accepted procedure has been discarded unless it was definitely supplanted by measures that proved to be more successful. Furthermore, as the Boston Dispensary is self-supporting, we had only an occasional free bed at our disposal, so that our patients had to be kept ambulatory if possible. As a result, we have had to check our failures and successes carefully in order that we might anticipate the case that would require hospitalization and the case that could be kept ambulatory. This restriction has been of tremendous benefit to us because, as a result of it, we are now able to select in advance the particular method of treatment best suited to obtain a cure.

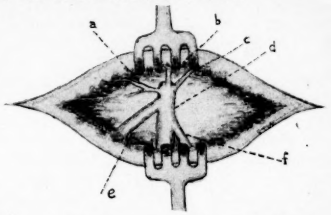

FIG. 1. A composite picture of all the possible tributaries to be found at the sapheno-femoral junction. (a) Superficial external puderdal. (b) Superficial epigastric. (c) Superficial circumflex iliac. (d) Long saphencus. (e) Internal superficial femoral. (f) External superficial femoral.

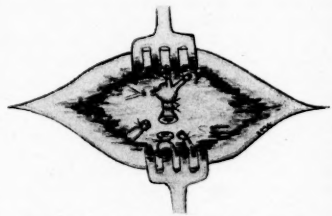

FIG. 2. Same as fig. 1 with all veins ligated.

Before we were able to select our cases, however, it was very necessary to know just what any particular procedure sought to accomplish and how that end was achieved. We therefore studied the whole question from the point of view of anatomy, pathology, theory and experience. It appeared that there are or have been three general methods of treatment for varicosities, namely, radical excision, ligation and injection. There may be modifications or combinations of any two of these methods.

Naturally, radical excision is to be avoided at all times and should no longer be considered a form of therapy, not because it is replete with recurrences, but because there appears to be no great advantage in doing a radical operation when the same result can be attained by more conservative measures.

The term high ligation, means the sectioning and ligating of the long saphenous vein just

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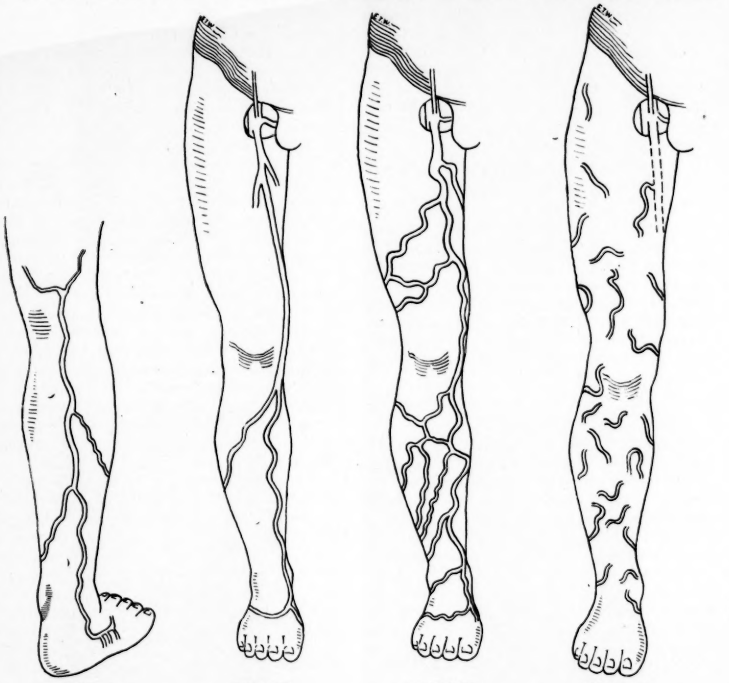
below its junction with the femoral vein,[3] together with the sectioning and ligating of all tributaries joining either the femoral or saphenous at that junction (figs. 1 and 2). The purpose of ligating all the tributaries at the saphenofemoral opening is to prevent any reestablishment of the long saphenous vein through the enlargement of some collateral from such a tributary. It was the neglect of this latter detail which probably caused the recurrence of varicosities following the operation of tying and stripping[4] and may also be the reason for failures following some present-day ligations.[1, 2]

pressure from the femoral vein causes either a recanalization of the partially sclerosed vein or a detouring around the sclerosed portion. Neglect or inability to accomplish fully this destruction has been the cause for recurrence of varicosities following the injection method.[1, 2]

With this information in mind and realizing that injection is an office procedure entailing no disability and probably only slight abhorrence



GROUP I. Short Saphenous. GROUP II. Early Long Saphenous. GROUP III. Late Long Saphenous. GROUP IV. Complex Long Saphenous.

FIG. 3.

The term, injection, means the introducing of a sclerosing solution into a varicosity. The purpose of injection is to obliterate the vein. To be successful, it is necessary that all of the varicosity be destroyed right up to the first competent valve above the diseased portion. If there is no such competent valve, then the destruction must be carried up to the saphenofemoral opening, otherwise, the reverse venous

on the part of the patient, whereas high ligation is an operation entailing more or less disability for several days* and is accompanied by considerable abhorrence, we formulated a definite rule to govern the choice of treatment at the Boston Dispensary. This rule reads as follows: *if adequate injection is possible, inject; otherwise, ligate.*

The problem was to ascertain which cases

*At the Boston Dispensary patients enter in the early morning, are operated upon before noon and are discharged in the afternoon or at the latest the next morning. If the ligation is bilateral they remain in the hospital until the next morning routinely. They are encouraged to walk immediately or shortly after the operation in order to prevent embolus formation, but there is some soreness in the groin for a few days.

could be *adequately* injected and which cases could not. To simplify this problem we divided all varicose conditions into four groups (figure 3), according to their "topographical" pathology, as follows:

GROUP I. Short saphenous. See figure 3 (I).

Varicosities restricted exclusively to the short saphenous vein are quite common, especially in the young. This vein runs up the posterior, external aspect of the calf to the popliteal space and usually has small tributaries coming down the thigh or from about the knee. It anastomoses with the long saphenous vein especially by way of one of the superficial femoral veins, but when this latter vein is also varicose the case is considered under Group II or III.

GROUP II. Early long saphenous. See figure 3 (II).

This group includes varicosities of the long saphenous system not showing a positive Trendelenburg test. The absence of a positive Trendelenburg test indicates that the sapheno-femoral valve is still competent and that the disease is confined to the vein below the level of this valve.†[5] As a general thing only a few branches are involved and they are moderately dilated and are not under great tension.

GROUP III. Late long saphenous. See figure 3 (III).

The only difference between Group II and Group III is the presence of a positive Trendelenburg test in the latter and its absence in the former group. This indicates that the sapheno-femoral valve is incompetent and that it is allowing a back-flow of blood from the femoral vein into the saphenous. All of the varicosities of the long saphenous vein and its branches show continuity, that is, they can be followed or definitely mapped out on the leg. Usually the varicosities are greatly distended and are under marked tension. The short saphenous vein may be involved as well.

GROUP IV. Complex long saphenous. See figure 3 (IV).

This group is distinct; it is not a late manifestation of Group III or at least only in part. It is usually seen in fat legs that, in addition, are quite edematous. The varicosities can be seen or felt beneath the skin for a short distance only, because they then dip down and disappear in the fat or deep tissues. No definite continuity of component parts can be made out, such as can be done in Group III. It is often difficult to determine whether the Trendelenburg test is positive, but it usually is, thereby showing that the sapheno-femoral valve is also diseased. In some of these cases a double Trendelenburg condition can be demonstrated, showing that some of the perforators are incompetent as well.

In looking over these groups from a theoretical viewpoint some of them automatically indicate whether adequate injection is possible and so suggest which particular procedure is best suited to obtain a cure. Obviously high ligation is not necessary in Group I (short saphenous), because the long saphenous vein is not involved. In Group II (early long saphenous) a few injections will adequately destroy any diseased portion of vein.[6] If, later on, the thigh portion of the saphenous vein and its protecting valve become diseased, then a positive Trendelenburg test will develop and this automatically changes the classification into that of Group III.

If all portions of a Group III case (late long saphenous) can be seen or felt and if obliteration by injection can be made right up to the sapheno-femoral opening, then a cure by injection is possible, but many cases will be found to be noninjectable, simply because somewhere in the thigh the long saphenous vein disappears in the deeper tissues and cannot be found even by percussion of the fluid wave. Obviously, in such cases high ligation is necessary to prevent recurrence.

Group IV (complex long saphenous) cases cannot be obliterated completely because long portions of the diseased veins have disappeared in fat and cannot be reached by the sclerosing fluid. High ligation is definitely indicated in those showing a positive Trendelenburg test[7] and even further surgery may become necessary in those with a double positive Trendelenburg test. De Takats[2] considered that 4 per cent of his cases required radical excision, while we have adopted Cooper's[8] suggestion of multiple ligations to control such cases.

In order to ascertain whether these theoretical considerations had been obtained in practice we conducted a follow-up examination. Out of about 1000 patients that had received injection treatment at least two years previously, only 113 had records sufficiently comprehensive, relative to the location of the varicosities and to the Trendelenburg test, for us to classify them according to our "topographical" groups ‡

†The etiology of varicose veins is still in a state of confusion. It has not been proved whether the destruction of the walls of the vein or the destruction of the valves of the vein is primary. Practically, it does not make much difference. We do know that disease of some kind is weakening both the vein walls and the valves. This weakening may be local or it may include the whole vein right up to its junction with the deep system.

‡For one thing we found it much more difficult to make the cured cases come in for examination. Consequently these figures are distorted in that we had more recurrences than cures available for classification. Secondly, our records were not sufficiently uniform or comprehensive to allow classification of all cases at the time of reexamination, especially if there had been a lapse of some years since treatment. This further reduced the number of available cases. Thirdly, as we have mentioned before, many patients failed to continue treatment until a cure was obtained. As a result, they are classed as recurrences when really they might have been cured.

FIG. 4. Picture of a Group I case (short saphenous). The sapheno-popliteal opening is indicated by the arrow. There were no varicosities of the long saphenous vein. Note the small tributary coming down the external aspect of the thigh.

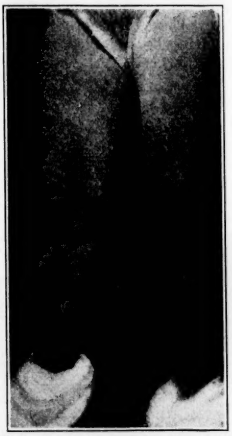


FIG. 5. Picture of a Group II case (early long saphenous), a typical location for varicosities of the long saphenous vein. There was no positive Trendelenburg test. The line in the thigh indicates the location of a fluid wave up the vein, which should be injected in order that a later development of a Group III condition may be prevented.

FIG 6. Another Group II type (early long saphenous). This is a branch of the long saphenous vein, starting in the thigh and running down the external aspect of the leg. It is called the external superficial femoral vein. No other part of the saphenous system was varicose and a tourniquet placed above its junction with the long saphenous vein revealed the absence of a positive Trendelenburg test.

FIG. 7. A Group III case (late long saphenous). Note that the whole varicosity can be followed or mapped out on the leg. The Trendelenburg test was positive.

However, of these 113, it was found that 81 (71 per cent) showed recurrences, and these recurrences could be classified according to our groups as follows:

Group	Number	Per cent	Average number of injections
I	—	—	—
II	8	9	3.3
III	60	75	11.1
IV	13	16	24.0
	81	100	

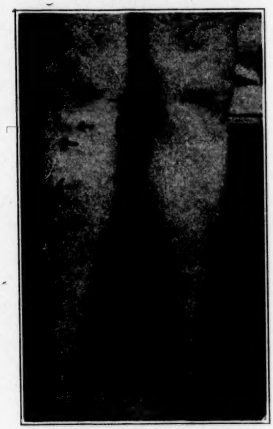


FIG. 8. A Group IV case (complex long saphenous). The affected leg was much larger than the other. The varicosities appeared only at the points marked by the arrows and yet the Trendelenburg test was positive. The vein could not be found in the thigh even by percussion. Obviously injections would be totally inadequate.

There were 32 cured cases that had records sufficiently comprehensive for us to determine at the time of reexamination in which group they belonged before they were injected. These cases showed the following classification:

Group	Number	Per cent	Average number of injections
I	3	9	5.6
II	10	31	6.6
III	19	60	19.3
IV	—	—	—
	32	100	

If an analysis of both of these tables is made and the results reduced to the simplest possible terms, it will be seen that:

100% of Group I were cured,
55% of Group II were cured,
24% of Group III were cured,
0% of Group IV were cured.

Of course these figures do not show whether failure was due to negligence on the part of the patient or to inadequate injection. They do, however, confirm our previously made hypothesis that adequate injections should cure Groups I and II, that a certain percentage of Group III cases can be so treated with success but that all of Group IV cases and some or most of those in Group III are failures by the injection method. Furthermore, the figures under "average number of injections" indicate that, as a part of success by the injection method, a sufficient number of injections must be made. Examination of these figures show that the average number of injections in our cured cases were practically double the number in the failures. For example, the Group II cases that were cured had an average of 6.6 injections, while the recurrences in this group were injected only 3.3 times. The cured Group III cases had an average of 19.3 injections, while the recurrent ones had only 11.1. On the other hand, many of the Group IV cases had from 40 to 50 injections and yet no cures were obtained.

The variable factors‖ in the above figures were too numerous for us to use the latter to make observations as to how varicosities in general classify according to our "topographical" groups, but we have been able to draw some such conclusions from the figures obtained after we had examined 343 new cases as they came into the clinic during the past year. These cases showed the following classification:

Group	Number	Per cent
I	21	6
II	101	29
III	189	56
IV	32	9

If these latter figures are applied to our previously made conclusions, it will be seen that approximately 35 per cent of all varicosities (Groups I and II) can be cured by injection, that about 56 per cent (Group III) *ought* to have high ligation, although a cure by injection is possible in some of them, and that 9 per cent (Group IV) *must* have surgery of some kind.

Our routine practice is simple. Each new patient, after a general physical examination, is classified according to the topographical pathology of the varicosed condition. Those falling into Groups I and II are promptly injected either by the single or multiple method. If it is possible to inject the thigh portion of the long saphenous vein, this is done; otherwise, each case is followed up at definite intervals and, if the disease seems to be spreading, more radical measures are undertaken.

Patients having Group III varicosities are persuaded to undergo high ligation, if possible, and such an operation is insisted upon wherever *adequate* injection of the whole of the long

‖See footnote ‡ on page 1070.

saphenous vein is impossible. These are the cases in which ligation has been a conspicuous success.

No general rule can be followed in the treatment of Group IV cases. Ligation alone will not cure, although it is indicated where there is a positive Trendelenburg test. Injections alone will not cure, nor will a combination of injections and simple high ligation.[8] In our cases, after high ligation, we inject comparatively large amounts (15 to 20 cc.) of a combined saline and sugar solution into all available varicosities in an attempt to thrombose the deeper unavailable portions. If these injections are not successful, it is almost certain that the perforators are incompetent or, in other words, that there is a double positive Trendelenburg test. In such a case a search is made for the locations of these perforators by either the Ochsner[9] or Cooper[6] test, and, if they can be found, multiple ligations[9] accompanied by simultaneous injections are made at these points at weekly or fortnightly intervals.§

There is really a Group V, which, for the sake of simplicity, we have not mentioned before. This group includes all cases that present special problems requiring further study before either ligation or injection can be recommended. All patients with any generalized or local conditions that might result in either a mortal or morbid accident following or coincident with an operative procedure fall into this group. We might mention some examples, such as, extreme hypertension and arteriosclerosis, extreme age, early or potential thromboangitis obliterans and all cases giving a history of previous deep phlebitis with persistent signs of either venous or lymphatic blockage.

SUMMARY

The present-day confusion concerning the treatment of varicose veins is the result of the rapid progress made in the field during the past ten years.

It is now a question of whether to ligate all varicosities, whether to ligate only selected cases or whether simply to inject.

We have answered this question by formulating and adopting the following rule: *if adequate injection is possible, inject; otherwise, ligate.*

In attempting to carry out this rule we have found it helpful to divide all varicosities into four groups based upon their topographical pathology and upon the presence or absence of a positive Trendelenburg test.

Theoretically, adequate injection is possible in Groups I and II, while high ligation is indicated in Group III and a combination of most every available measure becomes necessary in Group IV.

Reexamination of 113 previously injected cases seemed to confirm these theoretical considerations, while classification of 343 new cases showed that approximately 35 per cent of all varicosities fell into Groups I and II, which are curable by injection, that 56 per cent fell into Group III, in which ligation is indicated and that 9 per cent more fell into Group IV, requiring even more intensive treatment.

§A full report of a series of Group IV cases treated by multiple ligation and injection will be published later. We are confident that such a procedure will accomplish as much or more than radical excision would in such cases.

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DO YOU KNOW?

The first bifocal eyeglasses were invented by Benjamin Franklin.

Homicides and suicides are decreasing with the improvement of economic conditions, but fatal accidents are on the increase.

The first ambulance service was started in June, 1869, by Bellevue Hospital, New York City, under the direction of Dr. Edward B. Dalton.

Athlete's heart is supposed to be an ailment resulting from active exercise. There is no evidence that a healthy heart is harmed by athletic activities.

Good posture is a sign of self-respect, besides being conducive to health.

Each of the billions of red blood-cells in the body contains, besides life-giving oxygen, a charge of electricity. Two scientists of the Biological Laboratory at Cold Springs Harbor, Long Island, have measured this charge. The electricity of the blood-cells of a full-grown man, they found, would light a twenty-five watt bulb for five minutes.

Shakespeare said: They are as sick as surfeit with too much as they that starve with nothing.—*Excerpts from the Bulletin of the New York State Medical Society.*

MEDICAL PROGRESS

PROGRESS IN TUBERCULOSIS, 1935-1936

BY JOHN B. HAWES, 2ND, M.D., AND MOSES J. STONE, M.D.*

A PERUSAL of the literature on the subject of tuberculosis in the past year shows very little that can be called real progress. Progress in medicine, at best slow, is not always a steady, gradual, yearly advance. Granted, then, that during the past year no striking changes have been made, the last decade will be remembered for the rapid strides both in the field of early diagnosis and of therapeutics, the outstanding features of which may be summed up as the recognition of roentgenography as an aid in early diagnosis and of collapse therapy as an important adjunct to the general treatment of tuberculosis. Both of these features have now passed the controversial stage and have been generally accepted.

In the past year we note more and more the aggressive attitude of the tuberculosis agencies, voluntary and official. No more do we discuss the early diagnosis of this disease but, rather, discussion centers more on how to reach out and find the early cases of tuberculosis so as to institute treatment when it can do the most good. The tuberculosis survey is recognized as one of the best means of accomplishing this. This year has been marked by the number of surveys in various communities to which recognition has been given as valuable public health measures. With the rapid decline in the death rate, search for early tuberculosis in the general population is now feasible by this means. Although surveys have been made for many years, their practical application has been greatly emphasized during the past year.

Progress has also continued in the laboratory. Blood studies continue to be looked upon as aids in determining the progress and prognosis of this disease. Thus with the aid of the laboratory, therapeutic collapse therapy may now be more intelligently applied.

PATHOLOGY AND LABORATORY STUDIES

Opie, E. L. (*Am. Rev. Tuberc.* **32:** 617, 1935) summarizes our present-day concepts of tuberculous infection and disease. As to primary infection and reinfection he feels that there is no general agreement concerning the criteria upon which this distinction can be made. What one authority may look upon as the continuation of a first infection may be regarded as an adult infection by another. Opie feels that, since the relation of the first infection to the adult type of disease is still under discussion, it is inadvisable to designate the latter as a reinfection. He states definitely that calcified scars of lesions have little potential significance and, when unassociated with more significant changes, he feels that they require no special treatment. As to the relation of the first infection or childhood type of tuberculosis to the adult type, he finds no definite consensus among workers in this field concerning this. There is still considerable discussion in regard to the relative frequency of endogenous and exogenous infection of adults. The factors of race, heredity and nutrition are still in the controversial stage. He feels that tuberculosis of human races is profoundly influenced by habits, crowded living conditions, poverty and many other factors.

Amberson, J. B., Jr. (*Am. Rev. Tuberc.* **33:** 269, 1936) discusses the process of resolution in pulmonary tuberculosis. He finds that lesions which resolve are mainly the exudative pneumonic lobular or lobar types. They usually develop caseous cavities. Tuberculous exudate in the alveoli which does not resolve or caseate may become organized. He finds that resolution of early pneumonic lesions may be definitely favored by proper treatment which should include as a preliminary, two or three months or more of strict bed rest. The number of râles may increase during resolution due to better aeration of the alveoli. He claims that even calcified caseous residues may break down after many years of quiescence although this is infrequent. He makes the observation that râles which are not directly related to the tuberculous process may persist for many years in lungs in which resolution has occurred.

(This last observation is an important one. J. B. H.-M. J. S.)

Zimmerli, E. (*Tubercle*, **15:** 481, 1933-34) does not accept the claims that have been made concerning the pathogenesis of spirochetosis. He claims that the *Spirochaeta bronchialis* has never been established as a species of its own. He maintains that spirochetes may be found in any sputum provided it is not washed after expectoration. In thirty out of thirty-one cases of pulmonary tuberculosis he demonstrated post-mortem that the spirochetes which were present came from the mouth and were not found below the bifurcation of the bronchi. He concludes that bronchial spirochetosis is not established as a disease entity.

Boles, R. S. and Gershon-Cohen, J. (*J. A.*

*Hawes, John B., 2nd—President of the Boston Tuberculosis Association. Stone, Moses J.—Assistant Professor in Diseases of the Chest, Boston University School of Medicine. For records and addresses of authors see "This Week's Issue," page 1090.

M. A. **103:** 1841, 1934) investigated the incidence of intestinal tuberculosis and its relation to pulmonary tuberculosis. They found ulcerative intestinal tuberculous disease, mostly in fibro-ulcerative cavernous pulmonary tuberculosis. Tuberculous enteritis was so confined to this particular group that he doubts if there is intestinal ulceration without pulmonary ulceration. He found it more frequently in women of the Negro race between 20 and 40 years of age. Primary hyperplastic tuberculosis or tuberculoma of the bowel was not observed in any case.

Mayer, E. (*Am. Rev. Tuberc.* **32:** 294, 1935) discusses the controlling factors in the production of cavities of the lungs. He accepts two factors in this process: first, a pathologic one which causes destruction of the lung tissue, and secondly, the added mechanical factor, traction or pulling on the diseased area which increases the size of the cavity or at least holds it open. He concludes that both tissue destruction and mechanical overstretching may tend to increase the cavitation. There may be present a reparative tissue process which tends to heal the cavity which is opposed by the mechanical tension which acts to keep the cavity open. On the other hand, there may be some emphysema in the surrounding lung tissue which relieves the overstretching and thus tends to promote the reparative processes.

Coryllos, P. N. (*Am. Rev. Tuberc.* **33:** 639, 1936) maintains his theory as to the formation and closure of cavities. The important factors in the formation of cavities, in his opinion, are open bronchial outlets. He thus explains the mechanism of the changes occurring in the size of these cavities as being due to the physiologic exchanges of gas and of gas absorption. According to him the cure of the disease, or rather, its change from a progressive and active stage to an arrested and inactive one is based upon the biologic needs of the tubercle bacillus for large amounts of oxygen necessary for its life and growth. Thus he concludes that the development of fibrosis in the diseased lung is caused by the lack of oxygen which follows atelectasis and lack of circulatory blood in the diseased parenchyma.

Badger, T. L. and Meyers, W. K. (*New Eng. J. Med.* **211:** 241, 1934) studied the relationship of tuberculin sensitivity to the activity of tuberculous disease. Their findings showed that quantitative tests as to tuberculin sensitivity bear no relation to the degree of activity or inactivity of the tuberculous lesion.

Kaminsky, J. (*New Eng. J. Med.*, **24:** 245 1934) reports on the leucocytic picture as an aid in the measurement of activity in pulmonary tuberculosis. In a study of 356 admissions at Middlesex County Sanatorium in Massachusetts, the leucocytic picture was found to be of real value in estimating activity. He states that when there is a discrepancy between the blood picture on the one hand and the clinical and roentgenographic findings on the other, the former should be regarded as the more reliable index of activity.

(All of this needs still further study. J. B. H.-M. J. S.)

Muller, G. L. and Davidson, D. (*New Eng. J. Med.* **211:** 248, 1934) find that the monocyte lymphocyte ratio in tuberculous individuals has no diagnostic value. In a group of patients with normal or nearly normal m-l ratios, many were definitely active as indicated by toxic clinical symptoms and many showed an increased sedimentation rate with a shift to the left in the polymorphonuclear differential count. They conclude, therefore, that the monocyte lymphocyte ratio is not a reliable index of activity in tuberculosis. They add, however, that it does give a valuable indication as to how the individual is handling his infection; an increase in monocytes indicating a losing fight, a decrease in monocytes showing the reverse. It is thus of prognostic value.

Thiele, G. (*Beitr. z. Klin. d. Tuberk.* **85:** 302, 1934), in a study of 600 patients, endeavored to correlate the sedimentation test with prognosis. He found that patients who had a sedimentation rate of more than 51 mm. in the first hour showed 75 per cent mortality during the observation period; patients with the rate of 31 to 50 mm. had a mortality of 41 per cent; those with a rate of 11 to 20 mm. a 16 per cent mortality. It was particularly in those patients who had undergone operative treatment that a return to a normal sedimentation rate was indicative of an excellent prognosis.

Ordway, W. H. (*New Eng. J. Med.* **211:** 260, 1934) points out the necessity of using all available methods in the evaluation of activity in pulmonary tuberculosis. He found the sedimentation test to conform rather closely with clinical indications of activity, but that in the early stages it was definitely of less value than serial roentgenograms. He pointed out that x-ray must be relied on almost exclusively to diagnose small rather acute lesions especially in young adults.

Morriss, W. H. and Wilson, G. C. (*Am. Rev. Tuberc.* **33:** 66, 1936) made a comparative study of differential blood counts during clinical activity and after clinical arrest of the disease. In the counts made while the patient was clinically active, 86 per cent were unfavorable but 13.8 per cent showed a relatively normal picture. In 200 patients who were able to work one year after discharge, 49 or 24.5 per cent had an unfavorable blood picture and 75.5 per cent had a favorable blood picture.

Medlar, E. M. (*Am. Rev. Tuberc.* **33:** 473, 1936) made a comparative study of 200 consecutive leucocytic counts on 50 cases of mod-

erately and far-advanced tuberculosis at the beginning and at the end of bed rest. He found that a marked improvement of the tuberculous process, as indicated by the leucocyte picture, had occurred following bed rest. The degree of improvement varied markedly in individual cases. On graduated exercise, healing of the lung continued in some cases, remained stationary in others while in some the tuberculous process advanced.

CHILDHOOD TYPES OF TUBERCULOSIS

Myers, J. A. and Harrington, F. E. (*J. A. M. A.* **103:** 1530, 1934) sound again the warning that first infection type of tuberculosis or the childhood type of tuberculosis carries a double health liability: first, because, in the foci of this type of tuberculosis, tubercle bacilli remain alive over long periods of time, and secondly, because hypersensitivity results which is responsible for a great part of the tissue destruction in tuberculosis. They are optimistic and commend the present program of tuberculosis control in this country because of its aims to prevent the first infection type of tuberculosis from developing in the bodies of children and adults. This they feel is a much sounder policy than any method aimed at immunization which at best is questionable.

Smith, C. A. (*New Eng. J. Med.* **211:** 147, 1934) on the other hand observes that in children, while the mortality curve descends from the age group of six years on, the curve of tuberculous infection at that age ascends. He feels that in all probability some form of artificial protection for infants will prove to be of value. He cites the studies by Wallgren at Gothenburg and by Park in New York City where there was no mortality in the inoculated children as against 3 per cent in the controls. However, he adds that final judgment of methods of inducing relative immunity must be reserved.

Petroff, S. A. (*New Eng. J. Med.* **211:** 677, 1934) again takes issue with the followers of Calmette. He studied six different cultures of Calmette's attenuated tubercle bacilli over a period of eight years, three of which came from Paris and one directly from Calmette. The first of these proved quite pathogenic while an occasional guinea pig developed tuberculosis from the others. Petroff explains these discrepancies on the basis of "dissociation". He also failed to find any greater immunity with Calmette's method than with heat-killed organisms. Calmette and Neufeld, on the other hand, explained Petroff's results on the basis of contamination. Petroff concludes that the B.C.G. vaccine is not safe for wholesale vaccination.

Kereszturi, C.; Park, W. H.; Vogel, P., and Levine, M. (*Am. J. Dis. Child.* **48:** 507, 1934) give a statistical analysis of the progress of over 1000 children, some of whom had received B.C.G., others serving as controls. Many factors were considered in the study, including type of tuberculous exposure, age of children at time the vaccine was administered, as well as clinical and in some cases x-ray observations. They found that B.C.G. was not only harmless but apparently decreased the mortality due to tuberculosis. A detailed analysis of observations on 95 children, all of whom were known from birth and all exposed to open tuberculosis within the first year of life, indicated that the mortality due to tuberculosis was 1.9 per cent in the children receiving B.C.G. and 9.7 per cent in the controls.

Wallgren, A. (*J. A. M. A.* **103:** 1341, 1934) reports the results of B.C.G. inoculation in 230 children. These children were examined roentgenologically at least once a year. Only one of the 230 inoculated children exhibited, by x-ray, decided tuberculous infiltration of the hilum. Subsequent x-ray examinations disclosed a rapid disappearance of the density of the hilum so that a year after its manifestation the roentgenograms showed an almost normal condition. Only two out of the 230 children inoculated died, neither of them from tuberculosis. (Without controls such a study is valueless. J. B. H.-M. J. S.)

Hawes, J. B., 2nd; Wood, N. K. and King, D. S. (*New Eng. J. Med.* **210:** 1321, 1934) report the results of their survey made for the purpose of evaluating the work of the Prendergast Preventorium in Boston with reference to its usefulness in protecting children from tuberculosis and whether its work justified its further continuation. Seven hundred and five children who had been in definite contact with open cases of tuberculosis and each with a positive von Pirquet formed the basis of their study. Of this group only one had died of tuberculosis while only two developed clinical pulmonary tuberculosis. In addition to this, the standards of living and health and happiness of both the family and the children were markedly improved as a result of the teaching and care received at the Preventorium. They conclude that the preventorium is worthwhile and should be continued.

(A further study of 705 control children has since been made, demonstrating in a striking way the value of the preventorium. J. B. H.-M. J. S.)

Myers, J. A.; Harrington, F. E.; Stewart, C. A., and Wulff, M. (*Am. Rev. Tuberc.* **32:** 631, 1935) take up the treatment and the prognosis of the so-called first infection type of tuberculosis. After discussion as to treatment, they state rather emphatically that hospitals, preventoria, special schools, and so forth, cannot influence the course of the first infection type of tuberculosis. They state that observa-

tion for the appearance of the reinfection type and early treatment of that type is the only effective course now open to us in tuberculosis control.

(This dictum is in no way accepted by tuberculosis workers and authorities in this country. J. B. H.-M. J. S.)

Joress, M. H. (*Am. Rev. Tuberc.* **33**: 55, 1936) takes up the diagnosis of primary tuberculous infections. He states that the diagnosis of primary tuberculosis is based upon the development and persistence of pneumonic shadows. These pneumonic infiltrations show no physical signs or symptoms. He feels that primary tuberculosis may readily be overlooked in contact children because of their lack of symptoms and physical signs. Its recognition is made possible only through the use of serial roentgenography.

(He does not mention a positive tuberculin test as a prerequisite for such a diagnosis. J. B. H.-M. J. S.)

DIAGNOSIS

Pettingill, O. S. (*New Eng. J. Med.* **211**: 240, 1934) emphasizes that the presence of pulmonary tuberculosis and its progress are usually shown earlier by x-ray than by symptoms and physical signs. The same he finds true in regard to the evaluation of activity of the disease.

(This is not generally accepted, however. J. B. H.-M. J. S.)

Merrill, A. S. (*New Eng. J. Med.* **211**: 916, 1934) reminds us again that roentgenographic interpretation of pulmonary tuberculosis is not always the simple matter it is sometimes thought. Thus for the diagnosis of childhood tuberculosis, simple hilum enlargement and increased linear markings alone are insufficient. In the adult definite parenchymatous changes must be present to warrant a diagnosis of clinical tuberculosis and the effect of such conditions as asthma, bronchitis, dust inhalation and emphysema, or variations from the normal markings must be considered.

Nissler, C. W.; Sokoloff, M. J., and Cohen, L. (*Am. Rev. Tuberc.* **32**: 702, 1935) point out that there are many nontuberculous pulmonary conditions in children which frequently simulate tuberculosis. Such conditions may be apical and unilateral. Again the child may have a positive tuberculin test and x-ray findings suggesting tuberculosis and yet have a nontuberculous lesion in the lungs. They emphasize the importance of a careful history, clinical observations, x-ray and laboratory studies. Careful study of the sputum and of the gastric contents, the use of sputum in making cultures, guinea pig inoculations and smears are of great help in the differential diagnosis. They add that bronchoscopic studies are of great value in doubtful cases in which the sputum is repeatedly negative, for in this way secretions may be obtained directly from the foci, free of contamination while in addition this method also provides direct visualization of the bronchi.

(All of this is theoretically sound advice, but extraordinarily difficult to carry out in actual practice. The advice to use every method possible in diagnosing tuberculosis in childhood and not to rest the decision on x-ray alone, for instance, is sound and sane. J. B. H.-M. J. S.)

TREATMENT

Weisman, J. I. (*Am. Rev. Tuberc.* **33**: 522, 1936) propounds an interesting hypothesis as to the formation of effusions in artificial pneumothorax treatment. He found pleural adhesions present in 100 per cent of the cases that developed effusions. This high percentage of adhesions, he believes, is more than a mere coincidence and he makes a plea for earlier compression therapy in pulmonary tuberculosis.

COLLAPSE THERAPY

Overholt, R. H. (*New Eng. J. Med.* **211**: 682, 1934) discusses the indications for surgical collapse. He advocates temporary phrenic nerve paralysis in the following cases:

(1) Minimal lesions predominantly unilateral.
(2) Acute or progressive unilateral lesions (predominantly) when pneumothorax fails,
(3) Cases with basal involvement,
(4) To check pulmonary hemorrhage, pneumothorax failing,
(5) As an adjunct to inadequate pneumothorax when closed pneumolysis seems impracticable,
(6) To prepare a patient for thoracoplasty when he is not yet a good risk but when the upper lobe only is to be collapsed and diaphragmatic function is to be preserved,
(7) In some hopeless cases for symptomatic relief.

He mentions the following indications for thoracoplasty:

(1) Cases with unilateral cavitation, fibrotic and preferably stationary,
(2) Complicated pneumothorax,
  (a) uncollapsed cavities,
  (b) persistent adhesions and pneumolysis impracticable,
(3) Cases of bilateral apical involvement in fair general condition.

As to extrapleural pneumolysis and plombage he feels that it has a definite but limited usefulness. He advocates it in:

(1) Bilateral disease too extensive for upper thoracoplasty,

(2) As a preliminary to thoracoplasty in doubtful cases,
(3) As an adjunct to other procedures in bilateral disease.

Hedblom, C. A. (*Am. Rev. Tuberc.* **32:** 1, 1935) made a very extensive study of the results of surgical treatment of pulmonary tuberculosis. After summing up the results of the leading thoracic clinics as well as reviewing his own work he concluded that surgical treatment of pulmonary tuberculosis offers to properly selected patients not suitable for pneumothorax therapy the best if not the only prospect of a complete arrest of the disease, and when that cannot be achieved, of relief of symptoms and prolongation of life. He stressed the fact that proper selection of the patients and of methods and of the most opportune time for operation demands the closest cooperation between the phthisiologist and the surgeon. Adequate application of the method or combination of methods, indicated early in the disease before extensive destructive changes in the lung and before secondary visceral damage have occurred, will result in minimal mortality, a maximal conservation of respiratory function and in the greatest possible measure of rehabilitation.

Dolley, Frank S. (*Am. Rev. Tuberc.* **32:** 32, 1935) states that the outstanding advances that have been generally made during the past few years in thoracoplasty are these:

(1) The gradation of rib resection both in length and number to fit the patient's condition, age and the character and extent of his pulmonary involvement.
(2) The minimal sacrifice of uninvolved, healed lung even though by so doing a series of operative stages may be necessary,
(3) That the primary and all-important subject of surgical collapse of the chest is not to obtain relaxation or even approximation of the cavity-walls but rather cavity obliteration, for, unless the walls are actually in contact, it is very doubtful if actual scar tissue healing will occur.

Beatty, O. A. (*Am. Rev. Tuberc.* **32:** 41, 1935) made a study of end-results in tuberculous patients who have been treated by means of phrenicectomy in the Waverly Hills Sanatorium. Results in 351 phrenicectomies 2¼ to 7 years following operation were not highly favorable but in a selective group were distinctly so. He found that best results were obtained in those cases having moderately advanced disease with thin-walled cavities less than one inch in diameter with contractile lung tissue surrounding them. On the whole he feels that end-results justify phrenicectomy in only a selected group of patients.

Slavin, P. (*Am. Rev. Tuberc.* **32:** 535, 1935) describes some of the unfavorable results of phrenic paralysis in pulmonary tuberculosis with cavity. He mentions various types that were unfavorably affected by therapeutic phrenic paralysis. Two of them with excavated exudative and large fibrocaseous lesions developed postoperative stagnation of sputum in the cavities and accelerated detachment of caseous tissue, resulting in a rapid spread of the cavitation and massive extension of the disease. In large subpleural cavities, representing a third group, phrenic nerve paralysis causes impairment of drainage leading to progressive destruction within cavity walls. In cases with advanced fibroid tuberculosis with cavities there may be a dangerous postoperative reduction of lung tissue. He found that, in all these groups, high elevation of a paralyzed diaphragm does not seem to diminish the untoward effect of the operation.

Hare, H. F. and Davenport, L. F. (*New Eng. J. Med.* **211:** 762, 1934) studied 83 cases of phrenic neurectomy at the Middlesex County Sanatorium in Massachusetts. Fifty-four of these were permanent and 29 temporary. They found paralysis of the diaphragm to be effective in:

(1) Cavitation in the lower lobe about the hilum and occasionally in recent thin-walled upper cavities,
(2) In recent disease about the hilum and at the base,
(3) As a supplementary measure in partial but unsuccessful pneumothorax and in reexpanding pneumothorax,
(4) As a second choice operation in recurrent hemoptysis, pneumothorax having been unsuccessful and to control symptoms in active disease.

Slavin, P. (*Am. Rev. Tuberc.* **3:** 215, 1936) pleads for phrenic paralysis in the treatment of centrally located, isolated pulmonary tuberculous cavities. He argues that closure of such cavities by artificial pneumothorax cannot be accomplished in a selective manner. He feels that by means of paralysis of the diaphragm such isolated cavities may be closed with a minimal loss of function of the remainder of the lung.

Coryllos, P. N. (*J. Thoracic Surg.* **4:** 30, 1934) discusses thoracoplasty versus artificial pneumothorax. He makes the remarkable statement that pneumothorax shows 70 to 80 per cent of failures or deaths. Thoracoplasty on the other hand yields 40 to 60 per cent of clinical cures in the patients upon whom pneumothorax has failed. He points out that unilateral, apical cavities offer the most typical indication for

thoracoplasty. Another is far advanced unilateral lesions with cavitation and most of the lung tissue destroyed. He advises, however, that, with lesions in the middle of the lung or at the base, pneumothorax should be tried first.

(His figures as to failures and deaths in pneumothorax must be confirmed before they can be accepted. J. B. H.-M. J. S.)

Hedblom, C. A., and Van Hazel, W. (*J. Thoracic Surg.* **4:** 55, 1934) report on the combined results of 3762 thoracoplasties found in the literature since 1926 along with 200 of the authors' own cases. Of the total number operated upon, 35.4 per cent were clinically cured and 22.2 per cent improved or a total of 57.9 per cent with favorable results. They conclude that surgical treatment offers to a definite group of patients the best if not the only prospect of arrest of tuberculous disease.

Jessen, H. (*J. Thoracic Surg.* **4:** 1, 1934) gives his results of thoracoplasty in bilateral tuberculosis with cavitation. In 25 patients with bilateral cavitation 60 per cent are shown to be saved and only 40 per cent lost in contrast to an expected 100 per cent mortality. He adds that the complete resection of the first two ribs is a great step forward.

Fisher, L. (*J. Thoracic Surg.* **4:** 41, 1934) finds that nearly 36 per cent of apical cavities were closed by scaleniotomy and phrenicectomy. In a group in which scaleniotomy as an independent procedure was employed from 6 months to 3 years subject to phrenicectomy, 31 per cent of cavities were closed and 43 per cent showed negative sputum.

Peters, L. S. and Cornish, P. G. (*Am. Rev. Tuberc.* **33:** 44, 1936) writing on results in intrapleural pneumolysis state that 78 per cent of cases with partial compression can be converted into complete collapse and thus made well. They deplore that such a large number of pneumothorax workers are still reluctant to avail themselves of this added advantage in compression therapy.

Dufault, P. and Laroche, A. (*Am. Rev. Tuberc.* **33:** 219, 1936) consider the results of intrapleural pneumolysis. They found that this procedure is indicated in 40-60 per cent of artificial pneumothorax cases. In a smaller percentage it permits the carrying on of a pneumothorax which would otherwise have to be discontinued. They found that most of the complications from this operation occurred in the advanced active and unfavorable cases and that no fair estimate of results could be arrived at without a just appraisal of the original material. Thus in patients with advanced bilateral and active disease, although their chance of improvement with this operation is bound to be slim, still it is a chance worth taking and one that the patient should be given. They add that a judicious choice based on careful observation on the part of the clinician and a conservative, selective and a very precise technic on the part of the surgeon are the necessary requirements for any reasonable degree of success.

Carman, H. F. (*Am. Rev. Tuberc.* **33:** 491, 1936) pleads for more extended use of bilateral pneumothorax. He finds that bilateral pneumothorax offers hope to otherwise hopelessly sick patients. He emphasizes that the treatment be instituted by someone who is familiar with pneumothorax in general and who has a knowledge of the physiology of the cardiorespiratory system. He further urges that treatment be started early before formation of thick-walled cavities, fibrosis and pleuritic adhesions take place.

Corsello, J. N. and Bruckheimer, R. M. (*Am. Rev. Tuberc.* **33:** 502, 1936) reporting 36 cases of bilateral simultaneous artificial pneumothorax therapy agree with the writers referred to above as to its usefulness. They state that bilateral simultaneous artificial pneumothorax is a valuable, effective and comparatively safe form of treatment for certain cases of advanced pulmonary tuberculosis that otherwise would offer very poor prospects for recovery.

Matz, P. B. (*Am. Rev. Tuberc.* **33:** 533, 1936) writes on the end-results of the surgical treatment of pulmonary tuberculosis. He arrives at the conclusion that by a careful selection of cases in earlier stages, and using an improved operative technic, the results will be more satisfactory and the mortality rate will be still further reduced. He adds that there should be no hesitancy in using the various surgical collapse measures in the treatment of advanced pulmonary tuberculosis.

PNEUMOCONIOSIS

Pope, A. S. and Zacks, D. (*Am. Rev. Tuberc.* **32:** 229, 1935) investigated representative groups of granite and foundry workers in Massachusetts as to the frequency of silicosis and of silicosis along with tuberculosis. They found it definitely correlated with the duration of exposure to dusts containing free silica and to the concentration of such dusts. Among the granite workers examined, silicosis alone was found in 15.2 per cent and silicosis complicated with tuberculosis in 7.6 per cent. They found tuberculosis to be the cause of death in over one-third of all granite workers, three times that found in foundry workers and four times that in all males of twenty years and over. The silicosis in foundry men was not only less frequent but also less advanced than that in granite workers. They add that though there is an excess of tuberculosis deaths among foundry workers, pneumonia, which is the cause of about one-fourth of all deaths in foundrymen, appears to be the greatest occupational hazard in that industry.

Gardner, L. U. (*J. A. M. A.* **103:** 743, 1934) gives a brief summary of the effect of inhaled silica on normal and on tuberculous lungs. Most patients with silicosis die of complicating tuberculosis, the source of which may be endogenous or exogenous. Dusts containing silica are preeminently dangerous and likewise at least one of the silicates—asbestos—is very dangerous. Silica is a tissue poison which in low dilutions causes nodular fibrosis while in higher concentrations it produces a rapid necrosis of cellular tissue. Of great importance, he adds, is the fact that silicosis specifically predisposes the lungs to infection with the tubercle bacillus.

Hawes, J. B., 2nd, and Stone, M. J. (*New Eng. J. Med.* **211:** 1147, 1934) cite two cases of reactivation of an old and hitherto dormant silicosis by acute respiratory infections. They conclude that although the average case of silicosis advances very slowly if the dust exposure is removed, certain cases may develop active symptoms unexpectedly following acute respiratory infections.

Hall, W. C. (*J. Indust. Hyg.* **16:** 300, 1934) reviews the symptomatology of silicosis and silico-tuberculosis in 59 cases of uncomplicated silicosis and 36 cases complicated with tuberculosis. Seventy-five of the former were admitted to hospitals with no symptoms referable to the respiratory system and 15 per cent had such complaints as cough, dyspnea, asthma and chest pain. He adds that in many cases a positive diagnosis of silicosis can be made only by a roentgenographic examination.

Wood, W. B. and Gloyne, S. R. (*Lancet* **2:** 1383, 1934) state that the clinical picture of pulmonary asbestosis is that of fibrosis without excavation and the outstanding symptom is dyspnea. Diagnosis is made on the history of exposure, clinical picture, x-ray and sputum findings but they add that the finding of asbestosis bodies in the sputum is *not* conclusive. They found septic bronchitis, bronchopneumonia and pulmonary tuberculosis to be the commonest complications of the disease.

Mayer, E. and Grethmann, W. (*Am. Rev. Tuberc.* **33:** 313, 1936) call attention to the great difficulty often encountered in making a diagnosis of silicosis which is due to the fact that an accurate occupational history is often impossible to obtain in a general hospital. Inasmuch as the physical signs and symptoms are inconclusive, reliance must be placed chiefly on the x-ray evidence which in turn may be confused with other pulmonary diseases with very similar roentgenographic features. Silicosis may also assume an atypical form, hence the diagnosis is often more difficult than is generally realized.

(We quite fail to see why an occupational history is "often impossible" in a general hospital any more than in one's private office; dyspnea and limited chest expansion, while not conclusive, surely are of great importance. J. B. H.-M. J. S.)

MISCELLANEOUS

Watkins, J. H. (*Am. Rev. Tuberc.* **32:** 127, 1935) made a statistical study of postwar changes in the trend of tuberculosis mortality. He found that the downward tendency of tuberculosis mortality has been faster since the war than before the war for all states in the Registration Area of 1911 except Vermont. In that state the decrease may be attributed to the increasing mortality from tuberculosis among the granite workers. In general the alteration in the statistics has been greatest in New England and the Atlantic states. The postwar trend has been greater than that of the prewar for both sexes and at all ages except over 65 years in the registration states of 1900. The greatest differences were found at the younger age groups. At ages over 15 the differences were greater among males than among females. In 1921 when the characteristic statistic tendency for the next decade was initiated, the male trend-line began at a definitely lower level than did the female. He also adds that before the war the female tuberculosis mortality rate was greater than the male throughout the life span. This was also true of the postwar period except for the age group, 15-24, when the male ratio exceeded the female.

Bates, R. R. (*Am. Rev. Tuberc.* **32:** 161, 1935) made a follow-up study of medical students and physician patients discharged from Trudeau Sanatorium between the years of 1916 and 1931. He examined them primarily with a view to correlating the character and amount of work done during the first and second postdischarge years with the number of relapses that occurred. In the first place he noted that only a slightly greater proportion of medically educated patients came early for treatment, but they left on the whole in better condition than did the general run of patients. His conclusions are that what one does on leaving the sanatorium is not the only important factor concerned in maintaining health. Most of the cases that relapsed came from the "resting" and limited-work groups and not from the "hard working groups" of which only 19 per cent failed to remain well.

Stiehm, R. H. (*Am. Rev. Tuberc.* **32:** 171, 1935) made a survey of tuberculosis among University of Wisconsin students. With the institution of a definite case-finding program, the increase in the number of cases of pulmonary tuberculosis found was 430 per cent above that of a previous fourteen year average. Roentgenologic examination indicated that approximately 5 per cent of the positive reactors had adult type

tuberculous infiltration. Approximately 1 per cent of the positive reactors, and 0.2 per cent of those tuberculin-tested, had lesions requiring sanatorium treatment.

Friedman, E. and Hawes, J. B., 2nd (*New Eng. J. Med.* **211:** 446, 1934) advocate either single or multiple puncture method for tuberculin skin tests. They found that single puncture (Stewart method) and multiple puncture (Craig method) are less painful than scarification. The technic is also quite simple as no special instruments are necessary, an ordinary sewing needle being employed. They also found that the incidence of too superficial scarification is eliminated and thus there is less traumatic reaction. They found the method to be reliable and urge its adoption.

Newcomb, A. L. (*Am. Rev. Tuberc.* **32:** 507, 1935) makes very light of the incidence of tuberculosis among juvenile diabetics. His report is based on the observation of only forty diabetic children. In only six children, or 15 per cent, the tuberculin test was found to be positive. No case of adult type tuberculosis or phthisis was found.

(E. P. Joslin has conclusively demonstrated that juvenile diabetic boys are thirteen times as liable to tuberculosis as are normal boys. J. B. H.-M. J. S.)

Floyd, C. (*New Eng. J. Med.* **212:** 379, 1935) gives a résumé on the present status of treatment of the pregnant tuberculous woman. He emphasizes that ordinary statistics in this matter are not conclusive as they are not complete. He recommends the following in the treatment of tuberculosis in pregnancy. In patients with latent tuberculous disease, especially those with a suspicious history or x-ray changes, sanatorium care should be advised, but not abortion. Likewise, in early active cases it is better to provide sanatorium care with or without pneumothorax and let the pregnancy alone. In an active unilateral case with definite physical signs pneumothorax should be instituted at once as in the latter months of pregnancy the disease is accelerated. If pneumothorax is impossible, then abortion should be resorted to early for the same reason. He points out also that after the first sixteen weeks of pregnancy abortion is a major procedure, at least in the tuberculous, and should be undertaken only with great caution.

DANGERS TO EYESIGHT

Indiscriminate use of weight reducers, hair dyes and depilatories is causing serious injury to eyesight in the United States, according to a warning by Dr. Walter I. Lillie, in a recent issue of *The Sight-Saving Review*, quarterly journal of the National Society for the Prevention of Blindness.

Case stories of eye tragedies among his patients are cited by Dr. Lillie, who is a practicing ophthalmologist in Philadelphia, and a member of the Department of Ophthalmology of the Temple University School of Medicine there. Writing on "Cosmetics Detrimental to Vision," he says:

"Individuals who use cosmetics are unwittingly subjecting themselves to visual dangers. We are all potential victims, because the present antiquated Food and Drugs Act, passed in 1906, only requires the manufacturers of food and drugs to label their products properly, and does not penalize the acts of adulteration and misbranding. False and fraudulent therapeutic claims must be proved before the product can be removed from the market.

"These two little words 'and fraudulent' compel the Government to prove that the manufacturer knows the customer is being swindled. This has prevented any adequate control over quack or dangerous remedies. Extraneous advertising of these products through the newspapers, magazines and radio is without Federal control.

"Today the billion-dollar-a-year cosmetic industry is not subject to any Federal regulations unless the labels bear medicinal claims, which never occurs. There is no legal way to protect the public against dangerous cosmetics. Toilet preparations which are known to be harmful by the medical profession cannot be taken off the market regardless of any disfigurement or injury they may inflict. Although poisonous cosmetics that ravage their users by paralyzing, blinding or disfiguring them are the exception rather than the rule, the medical profession should be alert to the possibilities and probabilities of visual and bodily damage which may result from their use.

"The untoward visual effects may be temporary or permanent, depending upon the nature of the ingredient or the amount used, and the tolerance of the individual. The eyes are usually affected in one of two ways, either through direct contact with the preparation or indirectly through the absorption of the poisonous ingredient in the body. Three groups of cosmetics have the potentiality of producing severe ocular damage, namely: (1) weight-reducing preparations, (2) hair dyes, and (3) depilatory ointments.

"The present administration has asked for a new food and drugs act which will give consumers better protection than the present antiquated pure food law affords. The officials of the Department of Agriculture have drafted the Copeland Bill (erroneously called the Tugwell Bill), which is proposed in the interest of the public and the honest manufacturer. This act is to afford Federal control of the manufacturing, labeling, selling, advertising and shipping of prepared foods, drugs and cosmetics.

"This bill is actively supported by the American Medical Association, American Federation of Labor, The National Congress of Parents and Teachers, and eleven other national women's organizations. A powerful opposition lobby has been organized and is sponsored by the Proprietary Association of America and numerous allied groups."

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

FOUNDED BY RICHARD C. CABOT, M.D.

TRACY B. MALLORY, M.D., *Editor*

CASE 22491

PRESENTATION OF CASE

A 33 year old Canadian housewife was admitted complaining of pain in the chest.

During the 2 years preceding her entry the patient occasionally had mild attacks of substernal oppression and breathlessness. She remained fairly well, however, until 7 months before coming to the hospital, at which time she developed a cough associated with fever and pain in the chest, first on the right side and then bilaterally. These symptoms continued and she remained in bed for 2 weeks. An x-ray examination of the chest at this time was said to have been negative except for evidence of infectious arthritis. Accordingly, 2 weeks later a tonsillectomy was performed. Subsequently the patient had periodic dyspnea, frequent palpitation, fever up to 102.5° and progressively increasing cough productive of nonodorous sputum. There was no hemoptysis and no further note of chest pain. The dyspnea became worse during the last 3 months and the patient was confined to bed most of the time. A chest x-ray taken 4 months before entry was again essentially negative, but another taken one week before admission showed a lobulated mass along the right cardiac border. In the lateral view it was situated anteriorly just beneath the chest wall. There was no pulsation, and the diaphragmatic excursion was unimpeded.

Physical examination showed a well-developed, poorly nourished, dyspneic young woman frequently troubled by paroxysms of hacking cough. The trachea was in the midline and the right side of the chest seemed larger than the left. There were dulness, diminished fremitus, and distant breath sounds over an area extending from a point slightly on the right of the sternum anteriorly to the left anterior axillary line. Breath sounds and fremitus were diminished over the left chest posteriorly. Diaphragmatic motility was equal bilaterally but the left radial pulse was much weaker than the right. Elevation of the arms lessened this discrepancy. No details of the examination of the heart were noted except for the fact that the quality of the sounds was poor. The liver was not enlarged but its edge was tender.

The temperature was 100°, the pulse 110. The respirations were 20.

Examination of the urine showed a specific gravity of 1.010 with a trace of albumin. The sediment contained an occasional red and white blood cell in an uncatheterized specimen. The blood showed a red cell count of 4,000,000, with a hemoglobin of 70 per cent. The white cell count was 16,400, 70 per cent polymorphonuclears.

An x-ray film of the chest showed a hazy dulness obscuring the lower half of the right lung field, apparently due to fluid in the pleural cavity. Faintly seen through the dulness and extending parallel to the spine was an oval area of increased density which was thought to represent a mass close to the mediastinum. The heart shadow was displaced somewhat to the left and the left lung was clear.

On the day following entry an exploratory thoracotomy was performed.

DIFFERENTIAL DIAGNOSIS

DR. WILLIAM B. BREED: There are two things I would like to know about. One is whether this patient was followed in this hospital at any time prior to her admission, and the other whether all of these x-ray plates are our own and interpreted by Dr. Holmes' department. I think it makes a great deal of difference in interpreting the significance of the negative x-ray findings such a short time before she came in for operation.

DR. TRACY B. MALLORY: The first set of x-ray plates was not made here. Only anteroposterior views were taken and there was no lateral view at the time of the first x-ray examination.

DR. BREED: Have we the films?

DR. MALLORY: Yes.

DR. BREED: One unusual aspect of this case is—and I do not wish to cast aspersions on the surgical service—that a patient with this long history and very scanty work-up of material should come in on one day and have a thoracotomy on the next day. Either she was *in extremis,* or the diagnosis was perfectly clear!

DR. ROBERT SANDERSON: She had been in another hospital for some time where a thorough work-up had been done with, however, essentially negative results except for the x-ray findings. She was seen there in consultation by Dr. Churchill who transferred her to the Massachusetts General.

DR. BREED: I take it then that the diagnosis was clear when she came into the hospital. I think the diagnostic acumen was pretty good. If you knew the diagnosis and operated for a specific disease in that short time, I congratulate you!

The first chief complaint at once suggests that this may be a cardiac case. She complained of pain in the chest. It does not say where the pain was. It was either cardiac or pleural pain. As we go on the history begins to shape itself into some sort of pulmonary or bronchial affair, and not cardiac. The type of pain is not described, whether associated with cough or breathing; but I am prejudiced having read this through and knowing that a thoracotomy was done. I am assuming that it had something to do with the pleural cavity, lungs or bronchi. The duration is 3 years, which is certainly not an acute story. One, then, is led to the tentative diagnosis of something in the mediastinum, because just before she came in there was a lobulated mass seen by x-ray lying up against the sternum, to the right of the heart. I think that a review of the plates over these many months prior to admission would be of considerable interest. It is possible that we may pick out something there that was not reported at that time. I only hope that that is true. I believe the tonsillectomy had nothing whatever to do with the present illness. She had essentially the same set of symptoms after the operation as before; namely, cough, fever and chest pain, which may have been accentuated; but there is nothing here to indicate that she had a postoperative pulmonary abscess.

To go on to the physical examination, she had a hacking periodic cough in the presence of dyspnea, and the trachea was in the midline. I should like to know if she had any clubbing of the fingers.

DR. SANDERSON: No, she did not.

DR. BREED: It says here that the right lung appeared to be larger than the left. It would seem to me that, if she had anything producing bronchial obstruction, one would find signs of a lobar collapse and the right lung would appear to be smaller; so I think we can pretty well rule out right bronchial obstruction. There is one very interesting point in physical examination. It says that from a point slightly to the right of the sternum anteriorly to the left axillary line there were dulness, diminished fremitus and distant breath sounds. That area covers essentially the area of the heart and I do not see how we can pay any attention at all to such an observation, because one would expect to find these signs over the heart. One would expect some diminished fremitus and also some diminished breath sounds in the same area normally. Then it says that the diaphragmatic motility was equal bilaterally, but that the left radial pulse was weaker than the right. Were there any blood pressure observations taken?

DR. SANDERSON: The blood pressure was a little low, around 110 to 118 systolic and about 65 to 80 diastolic.

DR. BREED: Was it equal in the right and left arms?

DR. SANDERSON: I do not know whether that was measured. I do not know who made the observation of this difference.

DR. BREED: It is possible that this observation does not mean anything. It should have been checked up by blood pressure readings in both arms. If the radial pulse on the left was weaker she ought to have a lower systolic blood pressure on the left. Then it says, "Elevation of the arms lessened this discrepancy." I will have to throw this observation out entirely because I do not know whether there was a lower systolic pressure in the left radial artery. Do you?

DR. SANDERSON: No.

DR. BREED: That, then, is out. I am glad of that because I would not know what "elevation of the arms lessened this discrepancy" would mean. Now as to the heart, except for there being some dulness over the heart shadow, poor heart sounds, which do not mean anything in a woman of 33 years, there is this question of a mass in the mediastinum. It also says that the heart was displaced somewhat to the left but the left lung was clear. The fact that by x-ray a left lung is clear does not tie up very well with this point in the physical examination, "breath sounds and fremitus diminished over the left chest posteriorly." The only explanation I can see in the presence of the negative x-ray of the left lung is that the heart was big and pushed over and perhaps gave some pressure through into the back.

What did she have in her mediastinum? It is remotely possible that she might have an encapsulated empyema from some unrecognized pneumonia, although it seems a long time for this to have been present. Also, she should have had a higher temperature and be sicker than she was. I think it is a fair question to ask how sick this woman really was. Was she *in extremis?* Was she operated on because you had to try to save her life?

DR. SANDERSON: She was operated on because she was going continually downhill. We could not help her medically. She had attacks of dyspnea and palpitation, and her color was bad. She really looked very sick.

DR. BREED: One has to consider encapsulated empyema or abscess with a bronchial fistula. One has to consider lymphoma and carcinoma. There is no real evidence that there is any connection between this and the bronchus. Certainly there is no great pressure on the bronchus. I do not suppose she had been bronchoscoped elsewhere?

DR. SANDERSON: That was deemed not advisable.

DR. BREED: I meant elsewhere. She is not too young to have carcinoma and she, of course,

is not too young to have lymphoma. I do not know what they expected to find. They apparently made up their minds that she should be operated on. I am not able to come down to one diagnosis, and I may perfectly well have not even mentioned the correct one. But I am going to mention as possibilities encapsulated pus, lymphoma and carcinoma. I do not see how one can tell without looking, and you apparently felt the same way.

X-ray Interpretation

Dr. George W. Holmes: There was only one film taken in this hospital and that was after the operation. This series of films was taken before the patient came to the hospital. Here is the chest film. It is interpreted as being negative. The curve of the right auricle is a little prominent and there is some straightening of the left border of the heart. But such a condition as that would be within normal limits, but one should keep the appearance in mind, however. This film was taken on the first of January. These were taken in July. That is quite a mass to appear in 6 months. There is a sharp bulge outlined here in the region of the right auricle. It is very distinct and slightly lobulated. The change on the left side is very slight, possibly it is a little more prominent. The diaphragm on the right is higher than it was before but certainly a mass of that size arising from the bronchus would cause more evidence of bronchial obstruction than we see here. It seems more reasonable to suppose that the mass is part of the heart shadow or mediastinum rather than a tumor arising primarily in the lung. We have the fluoroscopic note that the diaphragm moved well on both sides, further evidence of air entering into the chest.

Dr. J. H. Means: Dr. Holmes, did that pulsate?

Dr. Breed: It says in the note that it did not.

Dr. Holmes: If it had, that would help. This is a film taken in an oblique manner and the mass moves to the right with the heart and is probably anterior. The esophagus is fairly well filled but the barium is not delayed. The stomach is normal. Then we have a direct lateral view, which shows that there is nothing wrong with the esophagus; and that the mass is in the anterior part of the chest. There is nothing in the character of the shadow itself to help. There are no areas of calcification and nothing that looks like teeth that you might get in a dermoid. The trachea and esophagus are not displaced. The mass is a little too far forward, I think, to arise from glands around the trachea.

Dr. Breed: I may say that I did not pay much attention to the question of aneurysm because of the lack of pulsation and because of the location. It is right up against the sternum.

Dr. Holmes: This mass would be consistent with an aneurysm.

Dr. Breed: Aneurysm of the heart?

Dr. Holmes: It might be an aneurysm of the right auricle. Of course it should pulsate. If we could be sure of that observation we could rule it out. Aneurysm arising from the ascending aorta would not be so far forward. Aneurysm of the pulmonary artery might be considered—aneurysm of an artery does not necessarily pulsate.

Dr. Breed: So that we cannot really rule out aneurysm here?

Dr. Holmes: I think you cannot.

Dr. Aubrey O. Hampton: What do you think of the rapidity of the development of this mass, Dr. Holmes?

Dr. Holmes: I think it does not help one way or the other. Aneurysm can develop rapidly, tumor can, cyst might if there is hemorrhage into it. I think the development is more rapid than most tumors we see, but it does not help me at all in making a diagnosis.

Dr. Means: Is anything said about fluid?

Dr. Holmes: This film was taken after the operation. There is no extension of the mass into the pleural space until after the operation. Some of you must have studied these films before the operation. Did you, Dr. Hampton?

Dr. Hampton: I do not know. I think so.

Dr. Holmes: I think it would be interesting to see the report you made at that time.

Dr. Hampton: Do you remember what I said, Dr. King?

Dr. Donald King: You said there was something in the chest film in the right border of the heart. You agreed there was a mediastinal tumor and it ought to be exposed.

Dr. Means: Dr. Churchill had a patient, you might recall, with a plunging goiter and the mass on one side became the same size and shape as the heart. I do not know how a goiter could hook up with these symptoms. It seems to have grown too fast. A small cystic affair with hemorrhage would explain it or if it were malignant. I think in Dr. Churchill's case he thought it was probably dermoid until he cut down on it and found it was thyroid.

Dr. Breed: I remember that case. The reason I did not consider that was the rapid development of growth.

Dr. Means: Of course we get rapidly growing tumors of the thyroid.

Dr. Mallory: Dr. Sanderson, can you tell us the progression of symptoms after operation and before death?

Dr. Sanderson: It was chiefly that of collection of fluid. The right chest filled up completely and there was a great deal of abdominal fluid. Toward the end there seemed to be fluid on the

left side, too. She was unable to hold anything on her stomach for the last 3 or 4 weeks, just sips of liquids. An attempt to give liquid by any other route was followed by an increased accumulation of fluid and she finally dehydrated herself. There was a loud rub over the whole anterior right chest at one time. The kidneys did not compensate very well but did not actually shut down until we gave her salyrgan and after that she practically had anuria.

DR. BREED: Have you ever seen cancer of the pericardium, Dr. Mallory?

DR. MALLORY: I have not seen primary cancer of the pericardium. I doubt if there is such a thing. There is supposed to be primary endothelioma of the pericardium but I have not seen that either.

The diagnosis is still wide open. If anyone cares to hazard a suggestion he might hit it.

CLINICAL DIAGNOSIS

Mediastinal tumor.

DR. WILLIAM B. BREED'S DIAGNOSES

Mediastinal tumor:

1. Lymphoma.
2. Cancer.
3. Encapsulated pus.

ANATOMIC DIAGNOSES

Primary sarcoma (probably fibrosarcoma) of the right auricle.
Compression of the superior and inferior venae cavae and esophagus.
Mural thrombus, right auricle.
Pulmonary atelectasis, bilateral.
Hydrothorax, bilateral.
Ascites.
Chronic passive congestion, liver, spleen and kidneys.

PATHOLOGIC DISCUSSION

DR. MALLORY: This is the specimen that was removed at autopsy. The tumor was not in the mediastinum but in the heart. It evidently arose in the lateral wall of the right auricle, grew into and practically filled the auricular cavity and here the tumor mass, as you see, projects through the tricuspid valve into the right ventricle. At the surgical exploration a very small fragment was removed from the periphery of the tumor which I think was largely nothing but its capsule, since it consisted chiefly of acellular fibrous tissue, but a few clusters of rapidly growing spindle cells were seen. Microscopic examination of the tumor itself showed a very rapid growing, highly malignant sarcoma with long, rather cylindrical cells which were somewhat suggestive in appearance of muscle cells. In spite of several hours of search and the use of various special stains, I have not been able to pick up any hint of striations in the tumor cells.

Tumors of the heart of any type are, of course, extremely rare. The most common one is a fibroma or myxofibroma which arises from one of the valve leaflets. The tumor in this case today, however, obviously arose within the musculature of the right auricle. It projected laterally to some extent, producing the shadow which was interpreted as a mediastinal tumor, but most of the growth was inward into the right auricular cavity. A lobular projection from the lower end of the mass projected downward like a short thick finger through the tricuspid valve but was not attached to the leaflets at any point. From the anatomic findings one would have expected the symptomatology from the start to have been that of right-heart failure but only in the terminal stages did this occur.

Dr. Churchill's diagnosis at the time of his exploratory thoracotomy was a mediastinal tumor which he believed was producing symptoms from pressure upon air passages and great vessels. Even after he had decided that resection was impossible and had biopsied the tumor I am sure he had no idea that he was dealing with a primary tumor of the heart.

CASE 22492

PRESENTATION OF CASE

A 79 year old American street cleaner entered complaining of pain in the right upper quadrant.

For about 4 or 5 weeks before entry the patient had been troubled with nonradiating, dull, aching pain in the right upper quadrant which gradually increased in severity. Prior to admission this became quite sharp, cramp-like in character, and frequently disturbed his sleep at night. The pain recurred several times daily, particularly after exertion, and caused the patient to be short of breath. The pain lasted for several minutes at a time, had no relation to meals, and occasionally was so severe as to compel him to lie down. About a week before coming to the hospital he first noted that his skin was becoming yellow. The stools were clay colored, his urine was very dark, and the jaundice increased rapidly. Several days before entry he became nauseated and vomited everything ingested. There had been some constipation and considerable weight loss during his present illness but no history of a previous significant ailment was elicited.

Physical examination showed a dehydrated, poorly nourished, elderly man in no apparent discomfort. There was evidence of loss of weight and the skin was loose, wrinkled and showed a

deep icteric tint. The sclerae were yellow and the tongue was heavily coated. The heart was not enlarged but the sounds were distant in character. No murmurs were heard. The blood pressure was 140/85. A few fine râles were audible at the left base posteriorly, in which region voice sounds showed increased intensity. The lungs were otherwise clear. A firm, ill defined, slightly tender mass was palpated in the epigastrium and right upper quadrant, and there was tenderness also at the right costovertebral angle.

The temperature, pulse, and respirations were normal.

Examination of the urine showed a specific gravity of 1.014 with a large amount of bile. The sediment was negative. The blood showed a red cell count of 4,100,000, with a hemoglobin of 80 per cent. The white cell count was 8,300. The sedimentation rate was 0.3 millimeters per minute. The bleeding time was 1 minute and 45 seconds; the clotting time 5 minutes and 30 seconds. A Hinton test was negative. The nonprotein nitrogen was 32, chlorides equivalent to 102 cubic centimeters of N/10 sodium chloride, the CO_2 combining power 50.5 volumes per cent and the serum protein 6.2 grams. A van den Bergh test showed a direct reaction and there was 26.1 milligrams bilirubin.

A gastrointestinal series showed a normal esophagus, stomach, and duodenum. A flat film of the abdomen demonstrated proliferative changes about the margins of the bodies of the vertebrae and the arteries of the pelvis were moderately calcified. There were no visible stones or other calcified masses but there was some increase in density in the region of the liver. Examination of the remainder of the gastrointestinal tract was negative. The duodenal loop appeared to be normal.

The patient's condition remained essentially unchanged. On the fourth hospital day a laparotomy was performed. The abdomen contained much bile-stained fluid. The liver was definitely enlarged and contained numerous metastatic nodules of carcinoma. No primary focus was found but metastatic nodules were also observed in the culdesac. The gallbladder was not enlarged and there was no palpable dilatation of the common duct. A small nodule in the round ligament was biopsied and the abdomen closed. Postoperatively the patient became disoriented and irrational. Despite the administration of supportive treatment his condition became progressively worse and he died on the twelfth hospital day, seven days postoperatively.

Differential Diagnosis

Dr. Horace K. Sowles: "For about 4 or 5 weeks before entry the patient had been troubled with nonradiating, dull, aching pain in the right upper quadrant which gradually increased in severity." There is nothing particularly characteristic about the pain.

"Prior to admission this became quite sharp, cramp-like in character, and frequently disturbed his sleep at night." Now it begins to be somewhat more characteristic of a biliary obstruction.

"The pain recurred several times daily, particularly after exertion, and caused the patient to be short of breath." There we have a slight suggestion that perhaps the pain is of cardiac origin following exertion and yet later on in the physical examination we learn that the patient who is 79 years old has no demonstrable enlargement of the heart, no murmurs and a blood pressure of 140/85, all of which indicates a rather normal heart for a man of 79. As the symptoms develop it seems quite evident that his disease is associated with the liver and biliary tract.

The laboratory examinations are not particularly enlightening. Most all of them are within the range of normal limits except the van den Bergh, which is slightly increased and one might expect that with a patient who is jaundiced.

We have a patient who has had pain in the right upper quadrant which is suggestive of biliary tract obstruction. He has jaundice and his gastrointestinal tract is negative by x-ray. The story is of rather short duration. His pain is not quite that of a typical gallstone colic. It has a more gradual onset. We ordinarily do not associate the jaundice which comes with malignant disease with pain, but I think we should not overlook the fact that a certain proportion of malignant disease associated with jaundice does have pain with it, so beeause the patient has had pain does not rule out malignant disease as a cause of biliary obstruction.

Probably the large tender mass in the epigastrium was the large liver found at operation. Metastases in the liver substance would have to be very extensive to cause jaundice from liver destruction, and I feel that that is distinctly unlikely. I still think, in spite of there being no enlargement of the gallbladder and no palpable enlargement of the common duct, that he has obstruction of the common duct. The reason he has not developed enlargement and distention of the duct is that his story is of short duration.

The primary focus of malignant disease was not found. Of course the stomach was a logical place to look, but it was negative by gastrointestinal series and operative investigation, so we can rule out the stomach on that evidence. Carcinoma of the head of the pancreas might show only a small primary nodule, even though the metastases were extensive, and nevertheless encroach on the common duct sufficiently to cause

obstruction. Carcinoma of the duodenum is very rare, but carcinoma at the papilla is not so uncommon. It seems to me that that is the likely place to look for the primary focus, either carcinoma of the papilla or carcinoma of the head of the pancreas causing obstruction of the common duct. We cannot rule out a distant primary lesion.

DR. GEORGE W. HOLMES: The x-ray evidence in this case is largely negative and is valuable only in that way. The plain film of the abdomen shows the slight proliferative changes described in the spine and that the arteries of the pelvis are calcified. The bones are those of an old man, nothing abnormal there. I do not see the increased density described but it may be present.

Then we have a fairly good series of films of the gastrointestinal tract and it is interesting to note that the duodenum is perfectly normal, no widening of the loop that you sometimes get in carcinoma of the pancreas. The absence of widening I think is of no value, but its presence may be of some value. Here is another film showing the fundus of the stomach with a normal mucosal pattern and normal rugae, also a slight depression in the duodenal loop that you sometimes see with an enlarged gallbladder. It may be due to other causes. The x-ray findings are all negative.

DR. TRACY B. MALLORY: Are there any suggestions? It seems as if someone ought to mention Courvoisier's law before we finish.

A PHYSICIAN: Was anything found in the prostate clinically?

DR. MALLORY: It is recorded that there were no metastases in the culdesac. I think we may assume that the prostate was ruled out at the same time.

CLINICAL DIAGNOSIS

Carcinoma of the pancreas with metastases to the liver and peritoneum.

DR. HORACE K. SOWLES' DIAGNOSES

Carcinoma of the papilla of Vater.
Carcinoma of the pancreas.

ANATOMIC DIAGNOSES

Primary carcinoma of the bile ducts, common, hepatic and cystic.
Metastases to the liver, lung and kidney.
Icterus.
Bronchopneumonia.
Hydrohemothorax, left.
Arteriosclerosis, aortic and coronary.
Prostatic hypertrophy.

PATHOLOGIC DISCUSSION

DR. MALLORY: The postoperative clinical diagnosis was carcinoma of the head of the pancreas. The lack of distention of the gallbladder at operation was, however, a point against that diagnosis and the autopsy findings explain quite well why it was not distended. We found a large massive tumor within the liver itself, centered about the main hepatic duct to the left lobe. There were also smaller metastatic nodules throughout the liver. The liver was intensely bile stained, both left and right lobes. As we traced down the hepatic ducts we found that just at their juncture, involving also the proximal one centimeter of the common duct and the mouth of the cystic duct, there was a small hard disc-like nodule which microscopically proved to be cancer. There was nothing else found that could be the primary site, so that the carcinoma must have been primary either within the liver and metastasized downward along the lymphatics to the junction of the hepatic and cystic ducts, or it was primary there, and spread upward into the liver. From the anatomic findings one cannot definitely say which was the primary source but on the law of chances it seems more reasonable that the small lesion just at the juncture of the hepatic ducts was the primary focus and that the larger lesion in the liver was metastatic. The gallbladder was collapsed because the cystic duct was occluded.

Terminally he had a bronchopneumonia and we also found a few more widespread metastases. There were pulmonary metastases and a metastasis in the life kidney.

A PHYSICIAN: What was in the gallbladder?

DR. MALLORY: Colorless, slightly mucoid material, no bile.

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THE SURGICAL TREATMENT OF CERTAIN PSYCHOSES

IT has long been known that intracranial tumors, which could be successfully removed surgically, have been found in postmortem examinations of patients with long standing psychoses. Could the diagnosis have been made early, there is a possibility that removal of these tumors would have cured the patient of his mental symptoms. There are, moreover, patients with mental symptoms, the result of prolonged pain and the use of drugs in connection with diseases such as trigeminal neuralgia. Here the surgeon, operating on the cause of the symptoms, may rightfully be said to have cured the patient of his psychosis. These and a few other examples suffice to call attention to neurosurgery as one of the adjuncts of psychiatric practice. There is, however, another aspect of this problem, which has recently been brought to the attention of the medical profession by the work of Egas Moniz, Professor of Neurology in Lisbon. Moniz is well known for his work on arterial encephalography, first published in 1931, and for his more complete treatise on this subject, "L'Angiographie Cérébrale". 1934. More recently Professor Moniz has called attention to the operative treatment of certain psychoses.*

Basing his work upon the physiology of the frontal lobes, Professor Moniz devised an operation to aid patients suffering from the psychosis known as "agitated depression". Patients with this disease often have symptoms of long standing, and it was the more chronic cases of agitated depression that Professor Moniz first operated upon. His plan was to cut and cause disintegration of part of the frontal association fibers without injury to the motor cortex or the speech centers. This he succeeded in doing by a special instrument which enters the frontal lobe through a trephine opening. The operation, a relatively simple one in neurosurgery, can be done under local anesthesia. Professor Moniz reports observations on nineteen cases from a varied group of psychoses. Those that did best, however, were of the agitated depression type. In patients with this disease the agitation disappeared immediately and the patient became calm and tractable. Patients who formerly were able only to be cared for in a hospital for mental disease could return to their homes under nursing care. To be sure they had lost something of their initiative and possibly their powers of discrimination. They were, however, nearer a normal state of health than they had been before operation. Six patients have now been so operated upon in this country with equally good immediate results.

Such a radical procedure is not to be widely recommended at the present time. The operation, however, is one that might rightfully be considered in a patient with long standing agitated depression, if done by a skillful neurosurgeon, in a properly equipped hospital. It may mean a better future for certain patients with chronic mental disease. Much more time is needed and many more cases should be reported before valuable conclusions can be drawn from this work. The operation is based, however, on sound physiological observation and is a much more rational procedure than many that have been suggested in the past for the surgical relief of mental disease.

* "Tentatives Opératoires dans le Traitement de Certaines Psychoses", by Egas Moniz. Paris: Masson & Cie. 1936. 248 pages.

"GLYOXYLIDE"—A CURE FOR CANCER

In view of the recent reinvasion of Massachusetts by literature advertising the remarkable results obtained in the treatment of cancer, tuberculosis and so forth through the use of a remedy concocted by Dr. W. F. Koch, of Detroit, the *Journal* takes this opportunity to advise the members of the Massachusetts Medical Society to obtain the opinions of others before recommending its use. An excellent short summary is contained in a report by the Bureau of Investigation, American Medical Association (*J. A. M. A.* **107:** 519 [Aug. 15] 1936). Three unfavorable reports have been recorded by committees appointed by the Wayne County (Detroit) Medical Society to investigate Dr. Koch's "cure". The matter has been discussed at different times in the *Journal of the American Medical Association* and is available in reprint form upon application to the Association by anyone that encloses a self-addressed, stamped envelope.

The new remedy is named "Glyoxylide" and apparently supplants the former "antitoxin". While it is true, to the best of our knowledge, that no investigation of this new compound has been made, there is no reason for believing that "Glyoxylide" is any more efficacious than the former, discredited nostrum.

A GREAT RESPONSIBILITY

There is now before the people of the Commonwealth of Massachusetts one of the most important responsibilities that must be discharged by his Excellency the Governor and the Council. This is the appointment of a Commissioner of Mental Diseases.

Even though this matter has been discussed in the daily newspapers, it may be that many do not adequately comprehend the magnitude of this official obligation to maintain excellence of a particular service to the State.

There are at the present time sixteen Massachusetts State Hospitals for the treatment of mental illness, with over 28,000 inmates. In addition there are seventeen private hospitals and two veterans hospitals with 1,986 patients. All private hospitals of this class are under the supervision of the State Department of Mental Diseases in one way or another. The admissions to all of these institutions in 1935 amounted to 7,300 of these afflicted persons. Besides these large numbers, there are thousands of our people on the borderline of unstable mental health, many of whom will, sooner or later, require official recognition. Evidence of the interest of physicians and the laity in the problems involved in dealing with these groups is shown by many requests submitted to the President of the Massachusetts Medical Society for information as to the qualifications of the Commissioner of Mental Diseases who must direct the complicated agencies incident to the administration of state policies.

This *Journal* believes that the consensus of recognized psychiatrists is that a Commissioner of Mental Diseases should have had a broad experience and should possess good judgment as is expressed by the following qualifications:

THE COMMISSIONER OF MENTAL DISEASES OF THE COMMONWEALTH OF MASSACHUSETTS

I. *Should be—*

(1) *A physician* who is a graduate of a Class A Medical School, eligible to practice in Massachusetts, a member of the American Medical and American Psychiatric Associations.

(2) *A psychiatrist,* certified as such by the American Board of Psychiatry and Neurology, or eligible to such certification, able to qualify as an alienist in any court of law.

(3) *A creditable representative* of the Commonwealth at state, inter-state and national meetings and in matters pertaining to interstate and Federal relations.

II. *Should have—*

(a) Experience in the management and treatment of the insane preferably in institutions in the Commonwealth, equivalent to that required of Superintendents by the Department of Mental Diseases—five years in a mental hospital as a physician, in the several grades and five additional years as Assistant Superintendent and Assistant to the Commissioner or as Assistant to the Commissioner.

(b) *Information* of the condition and needs of the Department of Mental Diseases and the sixteen institutions under its control and of established precedents to enable him—

(1) To prepare a budget as required by the statutes.

(2) To supervise intelligently the annual expenditure of upwards of eleven million dollars.

(3) To represent acceptably the Department of Mental Diseases in its dealings with the Commission of Administration and Finance and its Budget Commissioner, the Committees on Public Institutions, and Ways and Means of the General Court and with other State officers, committees and departments.

(c) *Knowledge* (no less than that of the Superintendents of the institutions in the Department) of hospital management, the treatment of mental diseases, mental hygiene and research and of the management, custody and treatment of defective delinquents and criminal insane so that in planning, coordinating and supervising all these activities he may have the complete respect and cooperation of these Superintendents.

(d) *Cognizance* of the essentials governing the selection of a site for a new hospital or school, of the planning and construction of new institutions or of buildings and improvements at existing institutions and of the need for new institutions, buildings and improvements.

Fortunately there are several psychiatrists in the State who measure up to these requirements.

The *Journal* also believes that the problems of mental illness are inherently important factors in our social structure and include, in addition to the custodial care of recognized cases of mental illness, the adoption of preventive measures which may insure, so far as possible, happy and useful lives for individuals rather than the distress of body and mind resulting from neglect of the etiologic principles underlying the problems of psychology.

Even though the economic problems involved in dealing with human psychoses are important, we wish to impress upon the public that the motivating action of the executive in this appointment should be based on the higher ideal of a sympathetic regard for human suffering in dealing with the complicated details of the administration of the Department of Mental Diseases.

The medical profession has made great contributions to humanity in its various fields and, especially in psychiatry, Massachusetts is recognized as standing high among her sister states.

Can this Commonwealth disregard the articulate sentiment of organized medicine in the appointment of a Commissioner of Mental Diseases?

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

CLUTE, HOWARD M. B.S., M.D. Dartmouth Medical School 1914. F.A.C.S. Professor of Surgery, Boston University School of Medicine. Surgeon-in-Chief, Massachusetts Memorial Hospitals. Surgeon, New England Baptist and New England Deaconess Hospitals. Address: 171 Bay State Road, Boston, Mass. Associated with him is

ALBRIGHT, HOLLIS L. A.B., M.D. Harvard University Medical School 1931. Second Assistant Visiting Surgeon, Massachusetts Memorial Hospitals. Associate of Surgical Staff, New England Baptist Hospital. Instructor in Surgery, Boston University School of Medicine. Address: 171 Bay State Road, Boston, Mass. Their subject is "Thyroid Adenomas and Their Clinical Complications. With Especial Reference to the Discrete Adenoma." Page 1049.

JOHNSON, CHARLES I. B.S., M.D. University of Virginia Department of Medicine 1923. Assistant in Otolaryngology, Harvard University Medical School. Member of Staff, Children's Hospital; New England Deaconess Hospital; Brooks Hospital; Massachusetts General Hospital; Massachusetts Eye and Ear Infirmary; Lynn Hospital and Cambridge Hospital. Assistant Laryngologist, Massachusetts Eye and Ear Infirmary. Address: 270 Commonwealth Avenue, Boston, Mass. Associated with him is

FERGUSON, CHARLES F. A.B., M.D. Harvard University Medical School 1933. Formerly, House Officer, Pediatric Service, Boston City Hospital and The Children's Hospital. Now, Resident in Surgical Service, The Children's Hospital. Address: The Children's Hospital, 300 Longwood Avenue, Boston, Mass. Their subject is "Foreign Bodies in the Air and Food Passages." Page 1054.

WARREN, SHIELDS. A.B., M.D. Harvard University Medical School 1923. Assistant Professor in Pathology, Harvard University Medical School. Pathologist, New England Deaconess Hospital; New England Baptist Hospital; Collis P. Huntington Memorial Hospital, and Pondville State Hospital. Director, Massachusetts State Tumor Diagnosis Service. Address: 195 Pilgrim Road, Boston, Mass. Associated with him are

GATES, OLIVE. A.B., M.D. Yale University School of Medicine 1929. Assistant Pathologist, Collis P. Huntington Memorial Hospital. Assistant Director, Massachusetts State Tumor Diagnosis Service. Address: 695 Huntington Avenue, Boston, Mass. And

BUTTERFIELD, PAUL W. A.B., M.D. Tufts College Medical School 1934. Intern in Pathology, Collis P. Huntington Memorial Hospital. Address: 80 East Concord Street, Boston, Mass. Their subject is "The Value of Histologic Differentiation of Basal Cell Carcinomas." Page 1060.

VIETS, HENRY R. B.S., M.D. Harvard University Medical School 1916. Associate in Neurology, Harvard University Medical School. Assistant Neurologist, Massachusetts General Hospital. Address: 6 Commonwealth Avenue, Boston, Mass. Associated with him is

MITCHELL, ROGER S. A.B., M.D. Harvard University Medical School 1934. Graduate Assistant in Neurology, Harvard University Medical School, at the Massachusetts General Hospital, February-August, 1936. Address: 191 Glen Street, Glens Falls, New York. Their subject is "The Prostigmin Test in Myasthenia Gravis, Second Report." Page 1064.

SPERBER, PERRY. A.B., M.D. New York University College of Medicine 1932. D.N.B. Resident Physician, New York City Hospital and New York County Penitentiary. His subject is "Treatment of Delirium Tremens with Sodium Evipal." Page 1065. Address: 93 Lexington Avenue, Providence, R. I.

WHITNEY, EDWARD T. A.B., A.M., M.D. Harvard University Medical School 1924. Assistant Surgeon, Boston Dispensary. Surgeon, New England Telephone and Telegraph Co. Address: 587 Beacon Street, Boston, Mass. Associated with him is

CONSALES, PETER A. M.D. Tufts College Medical School 1922. Junior Surgeon, Boston Dispensary. Address: 481 Beacon Street, Boston, Mass. Their subject is "The Management of Patients with Varicose Veins." Page 1068.

HAWES, JOHN B., 2ND. A.B., M.D. Harvard University Medical School 1903. Formerly, Assistant Visiting Physician, Massachusetts General Hospital. Director, Pulmonary Clinic and Non-Pulmonary Clinic, Massachusetts General Hospital. Consultant in Diseases of the Lungs, New England District, United States Veterans Bureau. Secretary, Massachusetts Tuberculosis Commission. Now, President of the Boston Tuberculosis Association. Director, Massachusetts Tuberculosis League; Rutland Cottage Sanatoria and National Tuberculosis Association. Consultant, Beth Israel Hospital; Jordan Hospital, Plymouth; and Henry Heywood Memorial Hospital. Address: 330 Dartmouth Street, Boston, Mass. Associated with him is

STONE, MOSES J. M.D. Tufts College Medical School 1921. Assistant Professor in Diseases of the Chest, Boston University School of Medicine. Physician, Chest Clinic, Massachusetts Memorial Hospitals and Tuberculosis Clinics, Boston. Health Department. Assistant Physician, Beth Israel Hospital. Address: 330 Dartmouth Street, Boston, Mass. Their subject is "Progress in Tuberculosis, 1935-1936." Page 1074.

The Massachusetts Medical Society

FOURTH ANNUAL POSTGRADUATE MEDICAL EXTENSION COURSE

The following sessions have been arranged by the Committee for the week beginning December 7:

Bristol North

Thursday, December 10, at 4:00 p. m., at the Morton Hospital, Taunton. Subject: Heart Disease: Treatment of Cardiovascular Emergencies. Instructor: W. D. Reid. Arthur R. Crandell, Chairman.

Bristol South (Fall River Section)

Monday, December 7, at 4:00 p. m., at the Stevens Clinic of the Union Hospital, Fall River. Subject: Lung Disease: Pneumonia and Its Complications. Diagnosis and Treatment. Instructor: Roderick Heffron. Howard P. Sawyer, Co-Chairman.

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Middlesex North

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Plymouth

Tuesday, December 8, at 4:00 p. m., at the Brockton Hospital, Brockton. Subject: Stomach and Duodenal Ulcer. Diagnosis and Treatment. Instructor: T. V. Urmy. W. H. Pulsifer, Chairman.

Worcester North

Friday, December 11 at 4:30 p. m., at the Burbank Hospital, Fitchburg. Subject: *Complications* of Diabetes and Their Treatment. Coma; Insulin Reactions; Surgery (Gangrene, Carbuncle, Etc.); Marriage and Pregnancy; Tuberculosis and Heart Disease. Instructor: E. P. Joslin. Edward A. Adams, Chairman.

(c) *Knowledge* (no less than that of the Superintendents of the institutions in the Department) of hospital management, the treatment of mental diseases, mental hygiene and research and of the management, custody and treatment of defective delinquents and criminal insane so that in planning, coordinating and supervising all these activities he may have the complete respect and cooperation of these Superintendents.

(d) *Cognizance* of the essentials governing the selection of a site for a new hospital or school, of the planning and construction of new institutions or of buildings and improvements at existing institutions and of the need for new institutions, buildings and improvements.

Fortunately there are several psychiatrists in the State who measure up to these requirements.

The *Journal* also believes that the problems of mental illness are inherently important factors in our social structure and include, in addition to the custodial care of recognized cases of mental illness, the adoption of preventive measures which may insure, so far as possible, happy and useful lives for individuals rather than the distress of body and mind resulting from neglect of the etiologic principles underlying the problems of psychology.

Even though the economic problems involved in dealing with human psychoses are important, we wish to impress upon the public that the motivating action of the executive in this appointment should be based on the higher ideal of a sympathetic regard for human suffering in dealing with the complicated details of the administration of the Department of Mental Diseases.

The medical profession has made great contributions to humanity in its various fields and, especially in psychiatry, Massachusetts is recognized as standing high among her sister states.

Can this Commonwealth disregard the articulate sentiment of organized medicine in the appointment of a Commissioner of Mental Diseases?

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

CLUTE, HOWARD M. B.S., M.D. Dartmouth Medical School 1914. F.A.C.S. Professor of Surgery, Boston University School of Medicine. Surgeon-in-Chief, Massachusetts Memorial Hospitals. Surgeon, New England Baptist and New England Deaconess Hospitals. Address: 171 Bay State Road, Boston, Mass. Associated with him is

ALBRIGHT, HOLLIS L. A.B., M.D. Harvard University Medical School 1931. Second Assistant Visiting Surgeon, Massachusetts Memorial Hospitals. Associate of Surgical Staff, New England Baptist Hospital. Instructor in Surgery, Boston University School of Medicine. Address: 171 Bay State Road, Boston, Mass. Their subject is "Thyroid Adenomas and Their Clinical Complications. With Especial Reference to the Discrete Adenoma." Page 1049.

JOHNSON, CHARLES I. B.S., M.D. University of Virginia Department of Medicine 1923. Assistant in Otolaryngology, Harvard University Medical School. Member of Staff, Children's Hospital; New England Deaconess Hospital; Brooks Hospital; Massachusetts General Hospital; Massachusetts Eye and Ear Infirmary; Lynn Hospital and Cambridge Hospital. Assistant Laryngologist, Massachusetts Eye and Ear Infirmary. Address: 270 Commonwealth Avenue, Boston, Mass. Associated with him is

FERGUSON, CHARLES F. A.B., M.D. Harvard University Medical School 1933. Formerly, House Officer, Pediatric Service, Boston City Hospital and The Children's Hospital. Now, Resident in Surgical Service, The Children's Hospital. Address: The Children's Hospital, 300 Longwood Avenue, Boston, Mass. Their subject is "Foreign Bodies in the Air and Food Passages." Page 1054.

WARREN, SHIELDS. A.B., M.D. Harvard University Medical School 1923. Assistant Professor in Pathology, Harvard University Medical School. Pathologist, New England Deaconess Hospital; New England Baptist Hospital; Collis P. Huntington Memorial Hospital, and Pondville State Hospital. Director, Massachusetts State Tumor Diagnosis Service. Address: 195 Pilgrim Road, Boston, Mass. Associated with him are

GATES, OLIVE. A.B., M.D. Yale University School of Medicine 1929. Assistant Pathologist, Collis P. Huntington Memorial Hospital. Assistant Director, Massachusetts State Tumor Diagnosis Service. Address: 695 Huntington Avenue, Boston, Mass. And

BUTTERFIELD, PAUL W. A.B., M.D. Tufts College Medical School 1934. Intern in Pathology, Collis P. Huntington Memorial Hospital. Address: 80 East Concord Street, Boston, Mass. Their subject is "The Value of Histologic Differentiation of Basal Cell Carcinomas." Page 1060.

VIETS, HENRY R. B.S., M.D. Harvard University Medical School 1916. Associate in Neurology, Harvard University Medical School. Assistant Neurologist, Massachusetts General Hospital. Address: 6 Commonwealth Avenue, Boston, Mass. Associated with him is

MITCHELL, ROGER S. A.B., M.D. Harvard University Medical School 1934. Graduate Assistant in Neurology, Harvard University Medical School, at the Massachusetts General Hospital, February-August, 1936. Address: 191 Glen Street, Glens Falls, New York. Their subject is "The Prostigmin Test in Myasthenia Gravis, Second Report." Page 1064.

SPERBER, PERRY. A.B., M.D. New York University College of Medicine 1932. D.N.B. Resident Physician, New York City Hospital and New York County Penitentiary. His subject is "Treatment of Delirium Tremens with Sodium Evipal." Page 1065. Address: 93 Lexington Avenue, Providence, R. I.

WHITNEY, EDWARD T. A.B., A.M., M.D. Harvard University Medical School 1924. Assistant Surgeon, Boston Dispensary. Surgeon, New England Telephone and Telegraph Co. Address: 587 Beacon Street, Boston, Mass. Associated with him is

CONSALES, PETER A. M.D. Tufts College Medical School 1922. Junior Surgeon, Boston Dispensary. Address: 481 Beacon Street, Boston, Mass. Their subject is "The Management of Patients with Varicose Veins." Page 1068.

HAWES, JOHN B., 2ND. A.B., M.D. Harvard University Medical School 1903. Formerly, Assistant Visiting Physician, Massachusetts General Hospital. Director, Pulmonary Clinic and Non-Pulmonary Clinic, Massachusetts General Hospital. Consultant in Diseases of the Lungs, New England District, United States Veterans Bureau. Secretary, Massachusetts Tuberculosis Commission. Now, President of the Boston Tuberculosis Association. Director, Massachusetts Tuberculosis League; Rutland Cottage Sanatoria and National Tuberculosis Association. Consultant, Beth Israel Hospital; Jordan Hospital, Plymouth; and Henry Heywood Memorial Hospital. Address: 330 Dartmouth Street, Boston, Mass. Associated with him is

STONE, MOSES J. M.D. Tufts College Medical School 1921. Assistant Professor in Diseases of the Chest, Boston University School of Medicine. Physician, Chest Clinic, Massachusetts Memorial Hospitals and Tuberculosis Clinics, Boston. Health Department. Assistant Physician, Beth Israel Hospital. Address: 330 Dartmouth Street, Boston, Mass. Their subject is "Progress in Tuberculosis, 1935-1936." Page 1074.

The Massachusetts Medical Society

FOURTH ANNUAL POSTGRADUATE MEDICAL EXTENSION COURSE

The following sessions have been arranged by the Committee for the week beginning December 7:

Bristol North

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MISCELLANY

CHILD HEALTH AND THE CHRISTMAS SEAL

BY LOUISE STRACHAN

Director, Child Health Education, National Tuberculosis Association

The smiling face of Santa Claus on the Christmas Seal this year reminds us that Christmas belongs to children. But to those familiar with the history of this little penny sticker, there is an even more poignant reminder of the intimate connection between the health of children and the very idea of having Christmas Seals at all!

It is thirty years ago since the Christmas Seal was introduced into the United States by Miss Emily P. Bissell of Delaware who began the sale of seals to raise money to care for the children in that state who had tuberculosis. She had established a little shack to care for these children, but money was sorely needed to keep it going. When she heard that in Denmark they raised money for the same purpose by selling penny Christmas stamps she seized the idea and put it into operation in Delaware. Later it became nation-wide in scope and children in every state have benefited thereby. "Behind the Christmas Seal", says Miss Bissell, "I see thousands of little children, crippled and sickly, who never had a chance for health and strength before, and millions of school children who are learning to be strong and vigorous all their lives long!" One of the most moving tales about that first Christmas Seal sale is that of the eager little newsboy who came into the office of Philadelphia's *North American*, the newspaper which helped Miss Bissell put over her seal sale so successfully. He had to stand on tiptoe to put his penny on the high marble counter, but his words, "Gimme one, me sister's got it", are still heart moving.

Close on the heels of the launching of the tuberculosis campaign in this country came the establishment of open-air schools for the care of delicate children, many of whom were known to have been exposed to tuberculosis. Other children who appeared anemic, run down, and in what was in those days believed to be a pretuberculous condition, were also sent to these schools. The use of height-weight tables to determine the health status of children was very popular, and youngsters 10 per cent or more underweight, according to the tables, were automatically classified as pretuberculous and listed as candidates for the open-air schools. It was in 1908 that the first school of this type was opened in Providence, Rhode Island, and it was not long before others were scattered all over the country.

Fresh air, extra feeding, and rest were the features of these open-air schools and classes from the very beginning. At first, unbounded enthusiasm for the virtues of fresh air, cast into the background the other facts in the régime of the open-air school, namely, extra food and rest. But as research in the field of nutrition contributed a better understanding of food values and the needs, along this line, of growing children, the emphasis shifted to nutrition. More recently, a better appreciation of the seriousness of the fatigue problem in children has turned attention to the importance of rest.

In the meantime, research and experimentation in the field of tuberculosis were constantly going on. Because it was known that tuberculosis is a communicable disease, that every case comes from another, efforts of research workers were bent on discovering some accurate diagnostic test which would uncover the early case. Tuberculosis is an insidious enemy, and a routine physical examination rarely discovers the disease in its early stages. In 1907 von Pirquet, a Viennese physician, developed a skin test, using tuberculin, which promised great things as a detector of childhood tuberculosis. Much experimentation was done with this both here and abroad but it was not until 1924 that the Massachusetts State Department of Health launched its ten-year program for the discovery of tuberculosis in children. At first the children selected for examination were divided into three groups:—contact cases; those 10 per cent or more "underweight" and children who looked sick. By 1927 when 50,000 children had been tuberculin tested the significant fact had been established, that so-called "underweight" had nothing whatever to do with the presence of tuberculous infection. Children apparently healthy, not only up-to-weight but even overweight, were found to have been infected with tuberculosis to a greater or less degree, though there were no physical signs to give the slightest indication of this. As a result, reliance on weight tables as a guide in discovering children in need of protective care has been abandoned, at least by those who keep in step with the ever-growing knowledge in the field of health.

In the past five years the use of the tuberculin test has spread widely over the country and is one of the major activities of the voluntary tuberculosis associations working with the health authorities and with organized medicine in an intensive effort to find the early cases.

The need for open-air schools and classes has been steadily decreasing as our facilities for discovering early tuberculosis have been increasing. However, their contribution to our better understanding of the hazards of childhood and of the need of all growing children for protective care is very great. We are beginning to realize that the school régime must be adapted to the health requirements of the individual child, instead of the other way round. How foolish to wait until a child becomes debilitated, before providing for his health needs! Prevention is better than cure, and surely wants no defence!

And so it is that the health problems of delicate children have brought about better health provision for all children, and the little penny Christmas Seal, through all the thirty years of its existence, has served to protect and maintain child health in the United States.

THE CHRISTMAS SEAL BIRTHDAY

The Christmas Seal Birthday Party will be held at luncheon Tuesday, December 8, at the Hotel duPont, Wilmington, Delaware. Speakers will be Dr. Thomas Parran, Jr., Surgeon General of the United States; Dr. Esmond R. Long of Henry Phipps Institute, Philadelphia, who is President of the National Tuberculosis Association, and Dr. Kendall Emerson, its Managing Director. The toastmaster will be Leigh Mitchell Hodges, the man who helped Miss Emily P. Bissell to conduct the first Christmas Seal Sale in the United States.

The cooperation of the physicians in Massachusetts in the successful conduct of the Christmas Seal Sale is greatly appreciated by all of the tuberculosis associations of the Commonwealth.

THE QUALIFICATIONS OF THE COMMISSIONER OF MENTAL DISEASES

At the meeting of the Boston Society of Psychiatry and Neurology on November 19, 1936, the following resolution was passed:

> "The Boston Society for Psychiatry and Neurology, whose members for fifty years have advocated the highest standards for the care of the mentally ill in Massachusetts, respectfully suggests to His Honor, the Governor of Massachusetts, that the man nominated as Commissioner for the Department of Mental Diseases be a man thoroughly trained by experience as an executive in a mental hospital and of such recognized professional ability as to have been qualified as an expert psychiatrist by the American Board of Psychiatry and Neurology."

APPOINTMENT OF DR. JOHN HOMANS

Dr. John Homans, clinical professor of surgery in the Harvard Medical School and surgeon to the Peter Bent Brigham Hospital, has been appointed visiting professor of surgery in the Yale University School of Medicine and surgeon-in-chief of the New Haven Hospital, in place of Dr. Samuel C. Harvey, who has leave of absence from November 1 to June 30.—*Science*, November 20, 1936.

CORRESPONDENCE

EXCITING CAUSES OF CANCER AND THE CANCER POTENTIAL

November 21, 1936.

Editor, *New England Journal of Medicine*,

FOOD FOR THOUGHT ON THE CANCER SYMPOSIUM HELD AT THE BOSTON MEDICAL LIBRARY, NOVEMBER 18, 1936

Dr. Greenough mentioned industrial irritants.

It seems clear that trauma and occupational irritants can be considered only as exciting causes of cancer formation.

That there must be a cancer potential not only in the individual but in a particular organ or portion of that organ in a given individual is obvious.

As an illustration: A man in the late thirties working in a printing ink factory has been suffering from hoarseness for about a year and a half. All the employees in that factory look poorly, I was told. The ones I saw did. They must at times be inhaling some of the poisonous powder dust in spite of their wearing masks.

The patient has been at work until a few weeks before I was called in to see him for the first time.

Laryngeal examination revealed an extensive cancerous mass of the left side of the larynx. He also had some ascites and parenchymatous nephritis (Dr. Greene), probable metastasis to the parenchyma of the kidneys.

Now he is the only one of many employees in that factory who has developed cancer. It is not in the lungs, but in the left side of the larynx.

While the avoidance of irritants may be a practical approach to the prevention of cancer, yet it does not solve the problem. We do not know all the irritants, and at what degree they may become an exciting cause.

Our ambition is to strike at a potential.

Since many of the cancers are masses of rapidly proliferating cells in a region where they do not belong, it may be the responsibility of the histologist to ascertain whether such foreign cells make their habitat in some tissue of a supposedly normal individual. These cells may become carcinogenic in the presence of an exciting cause.

The hormone influence on the production of cancer in the human being (Drs. Shear and Aub) has to be considered also as an exciting cause in the cancer potential individual. The clinical and physiologic data have to be evaluated.

The human being seems to settle down to cancer. We talk of the cancer age when the body activities, on the average, are on the decline. The hormones, therefore, are on the decline, and in certain cases are about to cease or have already ceased functioning.

A third of the cancers in the female organs appear five years after the menopause.

Another third in the ten-year period are equally prevalent in the years before and after the menopause, and the remaining third appear during the hormone activity. (Dr. Taylor.)

We may say then that, given an individual with cancer potential in a certain organ with existing irritants in that organ, cancer will not develop so long as his hormones exert a normal physiologic influence. The normal cells will keep up their supremacy. With the decline of the hormone activity the cancerous cells get the upper hand.

With much increased hormone activity the normal cells are overstimulated, irritated and overburdened, and the cancer cells again exert themselves, and their proliferation commences.

JOSEPH PRENN, M.D.

467 Commonwealth Avenue,
Boston, Mass.

THE LIST OF REPORTABLE DISEASES

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston
November 20, 1936.

Editor, *New England Journal of Medicine*,

At a recent meeting of the Public Health Council, it was voted under the authority of Chapter III, Section 6, that Pfeiffer Bacillus Meningitis should be added to the list of those diseases which are deemed to be dangerous to the public health and, therefore, reported to local boards of health. At the same time it was voted that the name of Epidemic Cerebrospinal Meningitis that has heretofore been carried on the list should be changed to read Meningococcus Meningitis.

With these changes, the present list of reportable diseases is as follows:

Actinomycosis
Anterior Poliomyelitis:—
  a. Paralytic
  b. Nonparalytic (preparalytic)
Anthrax
Asiatic Cholera
Chickenpox
Cholecystitis of Typhoid Origin
Diphtheria
Dog-bite
Dysentery:—
  a. Amebic
  b. Bacillary
Encephalitis Lethargica
German Measles
Glanders
Gonorrhea
Hookworm Disease
Infectious diseases of the eye:—
  a. Ophthalmia Neonatorum
  b. Suppurative Conjunctivitis
  c. Trachoma
Leprosy
Lobar Pneumonia
Malaria
Measles
Meningitis:—
  a. Meningococcus Meningitis
  b. Pfeiffer Bacillus Meningitis
Mumps
Paratyphoid Fever A
Paratyphoid Fever B
Pellagra
Plague
Rabies
Scarlet Fever
Septic Sore Throat
Smallpox
Syphilis
Tetanus
Trichinosis
Tuberculosis (all forms)
Typhoid Fever
Typhus Fever
Undulant Fever
Whooping Cough
Yellow Fever

Very truly yours,
HENRY D. CHADWICK, M.D.,
Commissioner of Public Health.

RECENT DEATH

McKEEN—SYLVESTER FORSHAY MCKEEN of 96 Dean Road, Brookline, Massachusetts, died at his home, November 29, 1936. After Dr. McKeen graduated from the University of New Brunswick, he entered the Harvard Medical School and graduated therefrom in 1896. He served his internship at the Boston City Hospital and, after postgraduate study in Vienna, carried on practice in Allston until 1923 when he moved to Brookline.

Dr. McKeen joined the Massachusetts Medical Society in 1897 and for many years was a member of the Council and served on the important Committee on Ethics and Discipline.

His widow, Mrs. Teresa McKeen; two sons, Reginald Forster, and Edward Forster, and a daughter, Anita McKeen, survive him.

NOTICES

BOSTON DISPENSARY

25 Bennet Street, Boston

MEDICAL CONFERENCE PROGRAM

Lecture Room, Second Floor
9-10 a. m., December, 1936

Thursday, December 3—Indications for Short-Wave Therapy. Dr. H. G. Brugsch.
Friday, December 4—Blood Lipids in Patients with Angina Pectoris. Dr. David Davis.
Saturday, December 5—Hospital Case Presentation. Dr. S. J. Thannhauser.
Tuesday, December 8 — X-Ray Demonstration. Dr. Alice Ettinger.
Wednesday, December 9—Hospital Case Presentation. Dr. S. J. Thannhauser.
Thursday, December 10 — The Capsule of Pneumococcus and Its Relation to Immunity (Review of literature). Dr. J. G. Blaine.
Friday, December 11—Observations on Symptoms of Cholelithiasis. Dr. Robert Zollinger.
Saturday, December 12—Hospital Case Presentation. Dr. S. J. Thannhauser.
Tuesday, December 15—Blood Clinic. Dr. William Dameshek.
Wednesday, December 16—Hospital Case Presentation. Dr. S. J. Thannhauser.
Thursday, December 17—Social Service Case Presentation. Miss E. R. Canterbury.
Friday, December 18—Subject to be announced. Dr. Allan M. Butler.
Saturday, December 19 — Hospital Case Presentation. Dr. S. J. Thannhauser.

THE BOSTON CITY HOSPITAL

MONTHLY CONFERENCE OF CLINICAL PATHOLOGY

A monthly conference of clinical pathology will be held at the Hospital on Wednesday, December 9, at 12 o'clock noon in the Pathological Amphitheater.

JOSEPH E. HALLISEY, M.D.,
Secretary, Medical Staff.

MEDICAL CLINIC AT THE PETER BENT BRIGHAM HOSPITAL

At 3:30 p. m. on Thursday, December 10, in the Amphitheater of the Peter Bent Brigham Hospital, Dr. George R. Minot, Professor of Medicine, Harvard Medical School and Director, Thorndike Memorial Laboratory and Visiting Physician, Boston City Hospital, will give a medical clinic. To it are cordially invited practitioners and medical students.

REPORTS AND NOTICES OF MEETINGS

OFFICERS OF THE MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE

At the Annual Meeting of the Massachusetts Society for Mental Hygiene held November 24, 1936, the following officers were chosen: President, Dr. Donald Gregg; vice-president, Dr. Walter F. Dearborn; secretary, Dr. Charles E. Thompson; treasurer, Romney Spring; assistant treasurer, Clarence G. McDavitt; executive committee, Dr. C. Macfie Campbell, Dr. William Healy, Dr. Lawrence K. Lunt, the Rev. Walter McGuinn, Dr. Abraham Myerson, Malcolm S. Nichols, Herbert C. Parsons, Mrs. E. Lawrence Shaw and Dr. Payson Smith. Directors elected are the following: Miss Mary Vida Clark, Miss Katherine C. Coveney, Dr. Homer Page, Dr. William Healy, Dr. Roger I. Lee, the Rev. Walter McGuinn, Dr. Winfred Overholser, Dr. Austen Fox Riggs, Arthur G. Rotch, Dr. Frederick F. Russell, Mrs. E. Lawrence Shaw, Dr. A. Warren Stearns and Miss Mary Lee Ware.

HARVARD MEDICAL SOCIETY

The first meeting of the Harvard Medical Society for the current academic year was held Tuesday evening, October 13, 1936, at the Peter Bent Brigham Hospital, Dr. Elliott C. Cutler presiding. The medical case was presented by Dr. Joseph Miller: A twenty year old, white female entered the hospital with the complaint of increasing prominence of the left eye of four months' duration. She had noted a slight tendency toward excessive perspiration since childhood, and a slight enlargement of her neck for four years. She had been seen in the outdoor department one and a half years previously, at which time a diffuse enlargement of the thyroid gland was noted, and the basal metabolic rate was found to be zero. A diagnosis of colloid goitre was made at that time. With the onset of the increasing prominence of the left eye she again visited the outdoor department, and a history of slight increase in nervousness, intolerance to heat, occasional tremor of the hands and palpitation, slight increase in appetite, and a gain of ten pounds of weight during the preceding six months was elicited. Four determinations of the basal metabolic rate gave normal findings. Four determinations of the blood cholesterol showed levels ranging from 77 to 156 mg. per cent (normal level between 150 and 200 mg. per cent), values showing definite hypocholesterolemia. Physical examination at time of entry to the hospital showed a restless girl with definite exophthalmos of the left eye, which showed a marked lid lag. The thyroid gland was diffusely enlarged, slightly more so on the left than on the right, and there was a faint bruit heard over its lower portion. The heart was not enlarged, and its rate varied from 80 to 110 beats per minute. The blood pressure was 140 mm. of mercury systolic, and 60 mm. of mercury diastolic. There was slight fine tremor of the hands on extension. The lower half of the body was slightly larger than the upper half. Laboratory studies showed the urine, hemoglobin, and red blood cell count to be normal. The white blood cell count was 19,000 on admission, but fell to normal levels later. A lumbar puncture was negative. X-ray studies of the skull showed no abnormality of the bones, and the pituitary fossa was within normal limits. There was no evidence of substernal goitre by x-ray. The blood cholesterol was found still to be lowered. Several determinations of the basal metabolic rate gave values ranging from plus three to plus seven. Lugol's solution was administered orally, with subjective decrease in nervousness, and the basal metabolic rate was lowered within a week to minus two, later to minus 14.

Dr. E. C. Cutler in discussing the case suggested that the normal basal metabolic rate for this patient might be minus 15. Dr. S. A. Levine stated that inasmuch as all the symptoms pointed to hyperthyroidism, he would advise thyroidectomy even though the basal metabolic rate was not elevated. Dr. Marshall N. Fulton remarked that a survey of the literature revealed a well-recognized group of patients with the symptoms of hyperthyroidism without elevation of the basal metabolic rate. He commented on the extremely labile pulse rate exhibited by this patient, variations between 67 and 120 beats per minute being noted. He also believed that her symptoms might be benefited by operation.

Dr. I. Abel presented the surgical case: A 56 year old white female was first seen 12 years previously complaining of pain in the right lower jaw. At that time the thyroid was noted to be enlarged, and the basal metabolic rate was found to be plus 14. Seven years ago she experienced mild cardiac decompensation which responded well to digitalis therapy. Two years ago alcohol injection was performed because of the persistent pain in the jaw. One year ago the right gasserian ganglion was removed for the same reason. At that time the basal metabolic rate

was found to be minus 18, and thyroid extract was administered, but was soon discontinued because of the condition of the cardiovascular system. Six months previously she experienced a mild cerebral accident. One month ago she entered the hospital on the advice of her private physician, at which time her pulse was found to be quite slow (60 beats per minute), her temperature was only 97 degrees Fahrenheit, and the thyroid gland was noted to be large, hard, nodular, and fixed to the surrounding structures. The basal metabolic rate was minus 28. The diagnosis lay between Riedel's struma and primary carcinoma of the thyroid. Total thyroidectomy was performed. The gland was found to be very hard, smooth, enlarged, and attached to the surrounding muscles. The pathologic report was "Riedel's struma".

Dr. Cutler discussed the case, and referred to the article of Riedel in the *Verhandl. d. deutsch. Gesellsch. f. Chir.*, 1896, in which he described several cases of acute and chronic inflammation in enlarged thyroid glands. He also referred to the work of Hashimoto, who described early cases of thyroiditis occurring in patients over 40 years of age, six times more frequently in females than in males, and usually in stout people. His article was published in the *Arch. f. Klin. Chir.*, 97:219, 1912.

The address of the evening was given by Dr. T. Wingate Todd, Henry Willson Payne Professor of Anatomy, Western Reserve University School of Medicine, Cleveland. Taking as his subject "Anthropologist in the Medical School", Dr. Todd spoke of the contributions made by anthropologic studies to medical knowledge. Although a child reproduces the developmental pattern of its parents, it does not slavishly follow this pattern on schedule either in growth or maturation. A child early impeded by defective nutrition or adverse environmental conditions suffers a setback in developmental growth which is seldom made up later even though later progress may be entirely normal when nutrition or circumstances are improved. "Nature rarely gives a second chance." This is illustrated in experiments performed on sheep by which the developmental growth pattern was mutilated by removal of the thyroid gland when the animals were one month old. The period at which the muzzle of the sheep undergoes most rapid growth is one to three months of age. The normal growth of the muzzle in the defective sheep did not occur, since the period of greatest effect of the surgical interference covered that period when the muzzle normally makes its greatest growth.

X-ray studies of the appearance of the centers of ossification and progressive maturation of epiphyses in normal, healthy children have shown these skeletal elements to be real "time tables of maturation". The relation to chronologic age in children who have died from lingering disease differs from that in well children. Long-continued ill health is reflected by changes in the bones. Children on the poverty line are behind well-situated children in their age relationship both of growth and maturation. This observation is confirmed experimentally by appropriate disturbance of nutrition in young guinea pigs.

The brains of thoroughly well children killed accidentally show progress in development much advanced over those of children of identical age dying from protracted disease. By the age of six years a child's brain is practically adult in size and pattern: the period of greatest velocity in developmental progress being from birth to two years. Thus, in order to inhibit the development of the brain, adverse situations must occur before the age of two years.

The anthropologic method and approach allow the determination of the period in life when ill health strikes, and offer some quantitative criteria of the "degree of health".

WILLIAM HARVEY SOCIETY

The next meeting of the William Harvey Society will be held Friday, December 11, in the Auditorium of the Beth Israel Hospital, Boston, at 8:00 p. m.

PROGRAM

Speaker: Dr. Henry E. Sigerist, Professor of the History of Medicine, Johns Hopkins University.

Subject: The Social Problems Confronting Medicine Today.

Chairman: Dr. Benjamin Spector, Professor of Anatomy, Tufts College Medical School.

SOUTH END MEDICAL CLUB

The next regular meeting of the South End Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston, on Tuesday, December 15, 1936, at 12 noon. The speaker will be Robert B. Greenough, M.D., Consulting Surgeon of the Massachusetts General and Collis P. Huntington Memorial Hospitals. His subject will be "Early Symptoms Suggestive of Cancer". All physicians are cordially invited to attend.

WACHUSETT MEDICAL IMPROVEMENT SOCIETY

The second lecture in the course in "Parliamentary Law for Physicians" will be given at Holden District Hospital, Tuesday, December 8, 1936, at 8 p. m., by Charles W. Proctor, entitled "Motions".

The course consists of four lectures, followed by general discussion, to any or all of which physicians, who are not members, and nurses, are invited.

THE ARLINGTON DOCTORS' CLUB

The regular meeting of the Arlington Doctors' Club will be held at the Ring Sanatorium on Tuesday evening, December 8, 1936, at 8:30 p. m.

The speaker will be Dr. Maurice Fremont-Smith, Chief Psychiatrist of the Outpatient Department, Massachusetts General Hospital.

His subject will be "Mind-Body Relationship."

The Belmont Doctors' Club has been invited.

The Sanatorium will serve a Dutch supper after the meeting.

All physicians are invited to attend.

FRANK H. GERRY, M.D., *President*,
SIDNEY M. SIMONS, M.D., *Secretary*.

NEW ENGLAND HEART ASSOCIATION

The next meeting of the New England Heart Association will be held at the Boston City Hospital in the Amphitheater of the Mallory Institute of Pathology on Monday, December 14, 1936, at 8:15 p. m.

PROGRAM

1. Demonstration of Specimens in Relation to Symptoms: A. Subaortic Stenosis: B. Cardiac Perforation from Solitary Abscess. Dr. Soma Weiss.

2. Circulatory Effects of Nitroglycerine. Dr. James G. M. Hamilton.

3. The Effect of Thrombophlebitis on the Venous Valve. Drs. Edward A. Edwards and Jesse E. Edwards.

4. The Relation of the Nutritional Deficiencies to the Cardiovascular System.

A. The Relation of Vitamin C to Rheumatic Fever. Dr. James M. Faulkner.

B. The Clinical Features and the Characteristics of the Disturbance of the Heart and of the Circulation in Nutritional Deficiencies. Dr. Robert W. Wilkins.

C. Vitamin B_1 Deficiency and the Heart in the Bat. Drs. Paul M. Zoll and Florence W. Haynes.

D. Structural Characteristics of the Heart in Deficiencies, and Therapy. Dr. Soma Weiss.

All members of the New England Heart Association and interested physicians are invited to attend.

JAMES M. FAULKNER, M.D., *Secretary*.

HARVARD MEDICAL SOCIETY

The next meeting of the Harvard Medical Society will be held in the Peter Bent Brigham Hospital Amphitheater (Shattuck Street Entrance), Tuesday evening, December 8, at 8:15 p. m.

PROGRAM

Presentation of Cases.

The Physiology of the Breast. By Edwin B. Astwood, M.D., The Johns Hopkins Hospital, Baltimore, Maryland.

Medical students and physicians are cordially invited to attend.

MARSHALL N. FULTON, M.D., *Secretary*.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, DECEMBER 7, 1936

Monday, December 7—

*4 p. m. Physicians and medical students are cordially invited to attend a clinic presented by the Medical, Surgical and Orthopedic Services of the Infants' and Children's Hospitals in the Amphitheater of the Children's Hospital.

Tuesday, December 8—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. X-Ray Demonstration. Dr. Alice Ettinger.

11:30 a. m. Massachusetts General Hospital. Eye Nerve Conference. Outpatient Department.

*8:15 p. m. Harvard Medical Society. Peter Bent Brigham Hospital Amphitheater (Shattuck Street entrance).

Wednesday, December 9—

8 a. m. Massachusetts General Hospital. Grand Rounds, Orthopedic Department.

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Hospital Case Presentation. Dr. S. J. Thannhauser.

12 m. Boston City Hospital, Monthly Conference of Clinical Pathology. Pathological Amphitheater.

†12 m. Clinico-Pathological Conference. Children's Hospital Amphitheater.

4 p. m. - 5 p. m. Surgical Pathological Conference, Dr. Cutler and Dr. Wolbach, Peter Bent Brigham Hospital.

Thursday, December 10—

*8:30 - 9:50 a. m. Exchange visit, Surgical and Orthopedic Staffs of the Peter Bent Brigham and the Children's Hospitals, held this week at the Peter Bent Brigham Hospital.

9 a. m. Massachusetts General Hospital. Surgical Grand Rounds. Surgical Amphitheater.

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. The Capsule of Pneumococcus and Its Relation to Immunity (Review of Literature). Dr. J. G. Blaine.

9:15 a. m. Massachusetts General Hospital. Neurological Conference. Ether Dome.

12 m. Massachusetts General Hospital. Clinical-Pathologic Conference.

*3:30 p. m. Medical Clinic, Peter Bent Brigham Hospital. Dr. George R. Minot.

Friday, December 11—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Observations on Symptoms of Cholelithiasis. Dr. Robert Zollinger.

10 a. m. Massachusetts General Hospital. Fracture Rounds.

12 m. Massachusetts General Hospital. Clinical Meeting of the Staff of the Children's Medical Service. Ether Dome.

8 p. m. William Harvey Society. Auditorium of the Beth Israel Hospital, Boston.

Saturday, December 12—

*9 a. m. - 10 a. m. Boston Dispensary, 25 Bennet Street, Boston. Hospital Case Presentation. Dr. S. J. Thannhauser.

*10 a. m. - 12 m. Staff Rounds at the Peter Bent Brigham Hospital. Conducted by Dr. Henry A. Christian.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

December 3—Faulkner Hospital Clinical Meeting. 5 p. m.

December 3-5—Annual Conference of the National Society for the Prevention of Blindness, Columbus, Ohio.

December 3-19—Boston Dispensary, Medical Conference Program. See page 1094.

December 7—Physicians and medical students are cordially invited to attend a clinic presented by the Medical, Surgical and Orthopedic Services of the Infants' and Children's Hospitals at 4 p. m. on the first Monday of each month, in the Amphitheater of the Children's Hospital.

December 8—Christmas Seal Birthday. See page 1093.

December 8—Harvard Medical Society. See notice elsewhere on this page.

December 8—The Arlington Doctors' Club. See page 1096.

December 8—Wachusett Medical Improvement Society. See page 1096.

December 9—The Boston City Hospital, Monthly Conference of Clinical Pathology. See page 1095.

December 10—Medical Clinic at the Peter Bent Brigham Hospital. See page 1095.

December 10—Pentucket Association of Physicians, Hotel Bartlett, 95 Main Street, Haverhill, at 8:30 p. m.

December 11—William Harvey Society. See page 1096.

December 14—New England Heart Association. See notice elsewhere on this page.

December 15—South End Medical Club. See page 1096.

December 15—Massachusetts Eye and Ear Infirmary, Monthly Clinico-Pathological Conference. See page 949, issue of November 12.

February 25, 26, 27, 1937—The New England Hospital Association. Hotel Statler, Boston.

March 30 - April 2, 1937—First International Conference on Fever Therapy. Postponement notice. See page 52, issue of July 2.

April 21-24, 1937—American Society for Experimental Pathology. See page 1075, issue of May 21.

October 25-29, 1937—American College of Surgeons. Chicago, Illinois.

DISTRICT MEDICAL SOCIETIES

FRANKLIN DISTRICT MEDICAL SOCIETY

Will meet at the Weldon in Greenfield at 11 a. m. the second Tuesdays of January, March and May.

CHARLES MOLINE, M.D., Secretary.

Sunderland.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

January 13, 1937—Bear Hill Golf Club, Stoneham.

March 16, 1937—Danvers State Hospital, Danvers.

May 11, 1937—Bear Hill Golf Club, Stoneham.

KENNETH L. MACLACHLAN, M.D., Secretary.

1 Bellevue Avenue, Melrose.

NORFOLK DISTRICT MEDICAL SOCIETY

January 19, 1937—8:15 p. m. The Peter Bent Brigham Hospital. Communications and Case Presentations by the Staff. Suggested title—"Abdominal Pain from the Medical and Surgical Standpoint." Details of program to be announced.

February 23, 1937—Time, place and details of program to be announced.

March 30, 1937—8:15 p. m. New England Deaconess Hospital. A Symposium on Diabetes entitled "A Survey of the Diabetic Work of the George F. Baker Clinic in the New England Deaconess Hospital." Communications and Case Presentations by the Staff. Drs. Elliott P. Joslin, Howard F. Root, Priscilla White, Alexander Marble and Allen P. Joslin.

May, 1937—Annual Meeting. Details to be announced.

Note: The Censors will meet for the examination of candidates on the first Thursday of May, 1937. Fee of $10.00 is payable at the time of examination. Application blanks may be obtained by writing the Secretary, furnishing name, address and name of school of graduation in medicine. Application must be made at least three weeks prior to date of examination. Candidates whose applications are on file will receive proper notices.

FRANK S. CRUICKSHANK, M.D., Secretary.

1247 Beacon Street, Brookline.

PLYMOUTH DISTRICT MEDICAL SOCIETY

January 21, 1937—11 a. m. Bridgewater State Farm.

March 18, 1937—11 a. m. Brockton Hospital.

April 15, 1937—Annual Meeting. 11 a. m. Ducy Hospital.

May 20, 1937—11 a. m. Lakeville State Sanatorium.

FRED F. WEINER, M.D., Secretary.

231 Main Street, Brockton.

SUFFOLK DISTRICT MEDICAL SOCIETY

January 27, 1937—Boston Medical Library. 8:15 p. m. Joint Meeting with the Boston Medical Library. "Anthropology." Dr. Carleton S. Coon.

March 31, 1937—Boston Medical Library. 8:15 p. m. "Social Insurance—It Affects the Medical Profession." Dr. Charles E. Mongan. Discussion: Dr. Channing Frothingham.

April 28, 1937—Annual Meeting. Boston Medical Library. 8:15 p. m. "Problems in Surgical Diagnosis." Dr. Howard M. Clute.

CONRAD WESSELHOEFT, M.D., President,
CHARLES C. LUND, M.D., Secretary.

WORCESTER DISTRICT MEDICAL SOCIETY

December 9—St. Vincent Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

January 13, 1937—Worcester City Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

February 10, 1937—Worcester State Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

March 10, 1937—The Memorial Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

April 14, 1937—Worcester Hahnemann Hospital, Worcester, Mass. 6:15 p. m.: Dinner—complimentary by the hospital. 7:30 p. m.: Business session and scientific program.

May 6, 1937—At 4:30 in the rooms of the Worcester Medical Library, Inc., at 34 Elm Street, Worcester, will be held the spring meeting of the Board of Censors.

Wednesday Afternoon and Evening, May 12, 1937—Annual Meeting. Time and place for this meeting will be announced in an early spring issue of the Journal.

ERWIN C. MILLER, M.D., Secretary.

27 Elm Street, Worcester.

BOOK REVIEWS

Diseases of the Nails. V. Pardo-Castello. 177 pp. Springfield and Baltimore: Charles C Thomas. $3.50.

Books devoted to nails are rare in the English language and the author deserves much credit for bringing together so much material regarding nails, and so many references to articles concerning nails and their diseases. The book considers the various types of nail conditions under two headings — the various affections which are peculiar to the nails, and the various conditions appearing in the nails in connection with systemic diseases. The congenital affections, dystrophies and roentgen ray treatment are all given adequate consideration. The pictures are excellent.

Dr. Colwell's Daily Log for Physicians. A Brief, Simple, Accurate Financial Record for the Physician's Desk. Champaign: Colwell Publishing Company. $6.00.

This financial record for physicians is a substantial, loose-leaf book, measuring 8½ x 10 inches. It consists chiefly of pages for entry of services rendered each day. There are also sections for entry of special services such as Inoculations, Operations and Deliveries. There is a summary sheet at the end of each month with spaces for entering not only receipts but the various items of expense incurred in carrying on the office. These figures would prove very helpful in making out the doctor's income tax. The book appears to be practical, well arranged and likely to be very useful, particularly to the general practitioner.

The Adrenals. Arthur Grollman. 410 pp. Baltimore: The Williams & Wilkins Company. $5.00.

The author in the preface states: "An attempt has been made to analyze the great accumulation of literature on the subject of the adrenals and present a working hypothesis from which the reader may start on his own efforts."

He has accomplished this quite successfully. The reader may be a little disturbed at finding many features in the working hypothesis at variance with the opinion of other workers in the field, and should reserve final judgment on many questions for further work. Nevertheless, the arguments are lucid, the bibliography is excellent, and the book should be valuable to anyone who wants to familiarize himself with the recent advances in the adrenal gland.